

Appendix B

Biological Assessment

Napa Berryessa Resort Improvement District

Wastewater Storage Ponds

1465 Steel Canyon Road, Napa County, CA

BIOLOGICAL ASSESSMENT

**Napa Berryessa Resort Improvement District
Wastewater Storage Ponds
1465 Steel Canyon Road
Napa County, CA**



Prepared

For

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September 2012

BIOLOGICAL ASSESSMENT

Napa Berryessa Resort Improvement District

Wastewater Storage Ponds

1465 Steel Canyon Road

Napa County, CA

PROJECT NAME:

Napa Berryessa Resort Improvement District
Wastewater Storage Ponds
1465 Steele Canyon Road
Napa, CA

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BIOLOGICAL ASSESSMENT

Napa Berryessa Resort Improvement District

Wastewater Storage Ponds

1465 Steel Canyon Road

Napa County, CA

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BIOLOGICAL ASSESSMENT

Napa Berryessa Resort Improvement District

Wastewater Storage Ponds

1465 Steel Canyon Road

Napa County, CA

Executive Summary

This study was conducted at the request of Summit Engineering, Inc as agents for the Napa Berryessa Resort Improvement District (NBRID). This study and report are provided as background biological studies necessary for securing permits from Napa County Conservation, Development and Planning Department for the proposed project.

The proposed project site and study area is located at 1465 Steele Canyon Road on the south shore of Lake Berryessa (APN 019-220-038, 060). The NBRID serves the residences of Berryessa Highlands. The project site is adjacent to an existing NBRID tail water pond and spray field. New storage water ponds are proposed within an oak woodland grassland ridge below the existing tail water pond. The study site is within the Lake Berryessa USGS Quadrangle.

The project proposes the development of three new treated effluent wastewater holding ponds (approximate 10.9-acres footprint) that are essential for compliance and operation of the NBRID wastewater treatment system. The proposed wastewater effluent ponds are down slope from an existing spray field. Pond one is sized for approximately 11.3 MGAL, pond two 4.2 MGAL, pond three 4.2 MGAL, and existing tailwater pond four 2.8 MGAL.

The purpose of the study and report is to identify biological resources that may be impacted by the proposed project.

Findings:

- We found no evidence that would indicate that the proposed project would negatively impact any of the special-status species known for the region. No special-status species known for the Quadrangle, surrounding Quadrangles or the County were identified on the project site nor did the project sites contain vegetation associates, habitat or edaphic conditions which would support special-status species;
- A portion of the project footprint will require tree removal. The tree removal (approximate 6-acres) will consist mainly of Blue Oaks (*Quercus douglasii*), Interior Live Oak (*Quercus wislizeni*), Valley Oak (*Quercus lobata*) and Ghost Pine (*Pinus sabiniana*);

- The project footprint will impact a drainage that is definable as “Waters of the U.S.” This will require a 1600 permit from the California Department of Fish and Game (DFG), U.S. Army Corps of Engineers (ACOE) permit, and water quality certificate from the Regional Water Quality Control Board;
- The vegetation on the site consists of Blue Oak Woodland in a Savanna like stand with Semi-natural Grassland ground cover (at present a portion of the project site is used for equipment storage and horse pasture);
- There are no sensitive plant communities, habitat, or sensitive biotic communities listed by DFG or Napa County associated with the project;
- The project footprint will not impact any vernal pools or seasonal wetlands;
- The proposed project will not substantially interfere with native resident fish, migratory fish, resident or migratory wildlife species, wildlife corridors, and or wildlife nursery sites.
- No raptor nests or significant bat nesting or roosting habitat was observed on the site or in the vicinity of the project;
- The project as proposed will not result in any significant adverse biological impacts off site provided standard construction practices and erosion control management are implemented during and following construction;
- There is no need for additional protocol-level wildlife surveys as per U.S. Fish and Wildlife; and
- It is concluded that further seasonal biological studies are unwarranted. The flora and fauna observed on the study site and property included as an appendix.

Recommendations

The project should comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland.

Trees surrounding the project to be retained should be provided with exclusionary fencing. Fencing should be at a minimum of four feet in height and clearly marked to prevent inadvertent encroachment by heavy machinery. Fencing should be installed either at the edge of the trees drip-line, or at the edge of the construction zone. All fencing should be in place prior to any site grading and prohibit all access to fenced areas.

Pond # 3 will impact a seasonal drainage that meets the definition of a “Waters of the State”. Consultation and permits are required from the Department of Fish and Game, U.S. Army Corps of Engineers, and Regional Water Quality Control Boards for the project impacts.

For ground disturbing activities occurring during the breeding season (February 15 to August 31), a qualified wildlife biologist should conduct pre-construction surveys of all potential nesting habitat for birds within 500 feet of earthmoving activities. Surveys should be conducted within 14 days prior to tree removal and or ground-breaking activities on the project site. If active bird nests are found during preconstruction surveys the project applicant should consult and obtain approval for appropriate buffers with the California Department of Fish and Game prior to tree removal and or ground-breaking activities or until it is determined that all young have fledged.

BIOLOGICAL ASSESSMENT

Napa Berryessa Resort Improvement District Proposed Wastewater Effluent Ponds Napa County, CA

A PROJECT

A.1 Introduction

This study was conducted at the request of Summit Engineering, Inc as agents for the Napa Berryessa Resort Improvement District (NBRID). This study and report are provided as background biological studies necessary for securing permits from Napa County Conservation, Development and Planning Department for the proposed project.

A.2 Project Location

The proposed project site and study area are located at 1465 Steele Canyon Road on the south shore of Lake Berryessa (APN 019-220-038, and 060). The NBRID serves the residences of Berryessa Highlands. The project site is adjacent to an existing NSBRID tail water pond and spray field. New storage water ponds are proposed for an oak woodland grassland ridge above the tail water pond and in a swale below the tail water pond. The study site is within the Lake Berryessa USGS Quadrangle. Plate I provides a site and location map of the property. Plate III provides an aerial photograph of the property.

A.3 Project Description

The project proposes the development of three new treated effluent wastewater holding ponds (approximate 10.9-acres footprint) that are essential for compliance and operation of the NBRID wastewater treatment system. Three new ponds are planned, due to site conditions that will allow for the calculated capacity needs. The existing treatment pond will also be expanded. The ponds will have a synthetic liner to protect groundwater quality. The three new proposed wastewater effluent ponds are down slope from an existing spray field. Pond one is sized for approximately 11.3 MGAL, pond two 4.2 MGAL, pond three 4.2 MGAL, and existing tailwater pond to be expanded pond four 2.8 MGAL. The attached Site Plan Plate V illustrates the project.

A.4 Purpose

The purpose of this report is to:

- Determine the presence of or potential for special-status animals or plants,

- Identify the existence of habitat which could support special-status animals or plants,
- Identify biological resources within the footprint of project site,
- Delineate any wildlife movement corridors within and across the property,
- Determine if there is a need for additional protocol-level wildlife surveys
- Assess the impacts of the proposed project on any on-site or off-site biological resources, and,
- Identify any State or Federal permits required by the proposed project.

A.5 Definitions

Definitions used in this report are attached in Appendix B.

B SURVEY METHODOLOGY

B.1 Project Scoping

The scoping for the project considered location, type of habitat and vegetation types present on the property or associated with potential special-status plant species known for the Quadrangles, surrounding Quadrangles the County or the region. Our scoping also considered records in the most recent version of the Department of Fish and Game California Natural Diversity Data Base (DFG CNDDDB Rare Find-3) and the California Native Plant Society (CNPS) Electronic Inventory of Rare or Endangered Plants. “Target” special-status species are those listed by the State, the Federal Government or the California Native Plant Society or considered threatened in the region. Our scoping is also a function of our familiarity with the local flora and fauna as well as previous projects on other properties in the area.

Section 15380 of the California Environmental Quality Act [CEQA (September, 1983)] has a discussion regarding non-listed (State) taxa. This section states that a plant (or animal) must be treated as Rare or Endangered even if it is not officially listed as such. If a person (or organization provides information showing that a taxa meets the State’s definitions and criteria, then the taxa should be treated as such. Tables I and II present target special-status species (see also Appendix C).

B.2 Field Survey Methodology

Our study was made by walking transects through and around the project site. Our fieldwork focused on locating target organisms or suitable habitat for target organisms, or indications that such habitat exists on the site. Surveys for the exact site of current project plans were conducted on August 20, 2012 with two personnel. Surveys were conducted on March 28, April 27, May 22, and June 6, 2012 in the area looking at adjacent areas similar vegetation and habitats.

Plants Field surveys were conducted recording identifying all species on the site and in the near proximity. Transects through the proposed project sites were made methodically by foot. Transects were established and scrutinized to cover topographic and vegetation variations within the study area. The Intuitive Controlled approach calls for the qualified surveyor to conduct a survey of the area by walking through it and around its perimeters, and closely examining portions where target species are especially likely to occur.

The open nature of the site, historic and on going agricultural practices (horse pasture), and small size of the proposed development footprint facilitated our field studies.

The fieldwork for identifying special-status plant species is based on our knowledge and many years of experience in conducting special-status plant species surveys in the region. Plants were identified in the field or reference material was collected, when necessary, for verification using laboratory examination with a binocular microscope and reference materials. Herbarium specimens from plants collected on the project site were made when relevant. Voucher material for selected individuals is in the possession of the authors. All plants observed (living and/or remains from last season's growth) were recorded in field notes.

Typically, blooming examples are required for identification however; it is not the only method for identifying the presence of or excluding the possibility of rare plants. Vegetative morphology and dried flower or fruit morphology, which may persist long after the blooming period, may also be used. Skeletal remains from previous season's growth can also be used for identification. Some species do not flower each year or only flower at maturity and therefore must be identified from vegetative characteristics. Algae, fungi, mosses, lichens, ferns, Lycophyta and Sphenophyta have no flowers and there are representatives from these groups that are now considered to be special-status species, which require non-blooming identification. For some plants unique features such as the aromatic oils present are key indicator. For some trees and shrubs with unique vegetative characteristics flowering is not needed for proper identification. The vegetative evaluation as a function of field experience can be used to identify species outside of the blooming period to verify or exclude the possibility of special-status plants in a study area.

Habitat is also a key characteristic for consideration of special-status species in a study area. Many special-status species are rare in nature because of their specific and often very narrow habitat or environmental requirements. Their presence is limited by specific environmental conditions such as: hydrology, microclimate, soils, nutrients, interspecific and intraspecific competition, and aspect or exposure. In some situations special-status species particularly annuals may not be present each year and in this case one has to rely on skeletal material from previous years. A site evaluation based on habitat or environmental conditions is therefore a reliable method for including or excluding the possibility of special-status species in an area.

Animals Our field techniques consisted of surveying the area with binoculars and walking the perimeter of the project site. Existing site conditions were used to identify habitat, which could potentially support special status species. Animals were identified in the field by their sight, sign, or call. All animal life was recorded and is presented in Appendix A.

Trees were surveyed to determine whether occupied raptor nests were present within the proximity of the project site (i.e., within a minimum 500 feet of the areas to be disturbed). Surveys consisted of scanning the trees on the property with binoculars searching for nest or bird activity. Our search was conducted from the property and by walking under existing trees looking for droppings or nest scatter from nests that may be present that were not observable by binoculars. Potential bat breeding habitat was surveyed for within 200 feet of the proposed project, by looking for roosting habitat rock outcrops, crevasses, and evidence of roosting.

Aerial photos were reviewed to look at the habitat surrounding the site and the potential for wildlife movement, or wildlife corridors from adjoining properties onto or through the site.

Wetlands The project site was reviewed to determine from existing environmental conditions with a combination of vegetation, soils, and hydrologic information if seasonal wetlands were present. Wetlands were evaluated using the ACOE's three-parameter approach: Vegetation, Hydrology, and Soils.

Tributaries to Waters of the US are determined by the evaluation of continuity and "ordinary high water mark." The ordinary high water mark of the creek was determined based on the top of scour marks and high flow impacts on vegetation.

B.3 Qualifications of Field Investigators

Chris K. Kjeldsen, Ph.D., Botany, Oregon State University, Corvallis, Oregon. He has over forty years of professional experience in the study of California flora. He was a member of the Sonoma County Planning Commission and Board of Zoning (1972 to 1976). He has over thirty years of experience in managing and conducting environmental projects involving impact assessment and preparation of compliance documents, Biological Assessments, DFG Habitat Assessments, DFG Mitigation projects, ACOE Mitigation projects and State Parks and Recreation Biological Resource Studies. Experience includes conducting special-status species surveys, jurisdictional wetland delineations, general biological surveys, 404 and 1600 permitting, and consulting on various projects. He taught Plant Taxonomy at Oregon State University and numerous botanical science and aquatic botany courses at Sonoma State University including sections on wetlands and wetland delineation techniques. He has supervised numerous graduate theses, NSF, DOE and local agency grants and served as a university administrator. He has a valid DFG collecting permit.

Daniel T. Kjeldsen, B. S., Natural Resource Management, California Polytechnic State University, San Luis Obispo, California. He spent 1994 to 1996 in the Peace Corps managing natural resources in Honduras, Central America. His work for the Peace Corps in Central America focused on watershed inventory, mapping and the development and implementation of a protection plan. He has over ten years of experience in conducting Biological Assessments, DFG Habitat Assessments, ACOE wetland delineations, wetland rehabilitation, and development of and implementation of mitigation projects and mitigation monitoring. He has received 3.2 continuing education units MCLE 27 hours in Determining Federal Wetlands Jurisdiction from the University of California Berkeley Extension. Attended Wildlife Society Workshop Falconiformes of Northern California Natural History and Management California Tiger Salamander 2003, Natural History and Management of Bats Symposium 2005, Western Pond Turtle Workshop 2007, and Western Section Bat Workshop 2011. Laguna Foundation and The Wildlife Project Rare Pond Species Survey Techniques 2009. A full resume is available upon request

C BIOLOGICAL SETTING

The property is located in Napa within the inner North Coast Range Mountains, a geographic subdivision of the larger California Floristic Province (Hickman 1993) which is strongly influenced by the Pacific Ocean. The region is in climate Zone 14 “Ocean influenced Northern and Central California” characterized as an inland area with ocean or cold air influence. The climate of the region is characterized by hot, dry summers and cool, wet winters, with precipitation that varies regionally from less than 30 to more than 60 inches per year. This climate regime is referred to as a “Mediterranean Climate.” The average annual temperature ranges from 45 to 90 degrees Fahrenheit. The variations of abiotic conditions including geology results in a high level of biological diversity per unit area in the region. The site is further modified by the proximity to Lake Berryessa which as a large body of water has an influence on local microclimate conditions.

The existing site conditions consist of fallow grasslands and oak woodlands, which are further described below. The site is fenced and is at present a horse pasture and equipment storage. Figures 1 to 9 below illustrate the site conditions and the project areas.

The property is at an elevation of approximately 600 feet. The study area drains by sheet flow into a seasonal unnamed tributaries of Lake Berryessa.

C.1 Site Description and Biological Resources Evaluation Area

Our survey focused on the project footprint and immediate surrounding habitat. The aerial photo illustrates the site (Plate III) and the photographs that follow further document existing conditions of the project sites.

The vegetation of California has been considered to be a mosaic with major changes present from one area to another often with distinct vegetation changes within short distances. The variation in vegetation is a function of topography, geology, climate and biotic factors. It is generally convenient to refer to the vegetation associates on a site as a plant community or alliance. Typically plant communities or vegetation alliances are identified or characterized by the dominant vegetation form or plant species present. There have been numerous community classification schemes proposed by different authors using different systems for the classification of vegetation. A basic premise for the designation of plant communities, associations or alliances is that in nature there are distinct plant populations occupying a site that are stable at any one time (climax community is a biotic association, that in the absence of disturbance maintains a stable assemblage over long periods of time). There is also evidence that vegetation on the site is part of a continuum without well-defined boundaries. There is no agreement as to which system of nomenclature to use for describing plant communities.

Biotic Communities integrate the concept of assemblages of plants and animals in a discrete area of the landscape associated with particular soils climate and topographic conditions.

The Plant Community on the parcel would be classified by the California Native Plant Society (CNPS) and Department of Fish and Game California Natural Diversity Data Base (CNDDDB) as: Valley and Foothill Grassland and Cismontane Woodland.

In general terminology one would refer to the habitat on the project site as Agricultural Grazing Lands or Ruderal Grassland and Oak Woodland with a ruderal grassland understory. In the sections below the vegetation and habitat on the project site is further categorized with the new system of vegetation classification by Sawyer et al (2009). A Manual of California Vegetation Second Edition classifies the vegetation on the project sites as Grassland Semi-natural Stands with Herbaceous Layer and a Quercus douglasii Woodland Alliance. This classification is the presently preferred system that over time will replace existing classification systems.

Vegetation mapping of the property and project site (Plate IV) uses Grassland Semi-Natural Stand and *Quercus douglasii* Woodland Alliance.

Grassland Semi-Natural Herbaceous Stand with Herbaceous Layer (Annual Grasslands or Valley and Foothill Grassland)

This stand is the understory of the Oak Woodlands within the proposed project footprint. It is apparent that the property and project site has had a long history of agricultural use and appears to have been grazed for decades. Experts conclude that native grasslands in California are among the most endangered ecosystem in the United States. Due in most part to historical land use and introduced non-native grasses and herbs, it is estimated that less than 1% of our state's original grasslands remain.

Semi-Natural Herbaceous Grasslands are a result of decades of agriculture and the introduction of non-native grasses and herbs. Sawyer uses the term "Semi-natural Stands to refer to non-native introduced plants that have become established and coexist with native species. This includes what can be termed weeds, aliens, exotics or invasive plants in agricultural and nonagricultural settings. The Semi-natural Herbaceous Stands cannot be mapped due to the small size but if one searches the site one can find small patches of the following;

Avena (barbata, fatua) Semi-Natural Herbaceous Stands Wild oats grasslands. *Avena barbata* or *A. fatua* is dominant or co-dominant in the herbaceous layer. Emergent trees and shrubs may be present at low cover. Herbs <1.2 m; cover is open to continuous. Stands are present in waste places, rangelands, and openings in woodlands. The membership rules require *Avena ssp.* to be >75% relative cover; other non-native <5% absolute cover, if present, in the herbaceous layer. *Avena* species are cool-season, annual grasses from Eurasia. These annual grasslands are common in the region.

Bromus diandrus Semi-Natural Herbaceous Stands Annual brome grassland; (Membership Rules *Bromus diandrus* >60% relative cover with other non-natives in the herbaceous layer). *Bromus diandrus* is dominant or co-dominant with non-native in the herbaceous layer. Emergent trees and shrubs may be present at low cover Herbs <75 cm tall are intermittent to continuous. Ripgut brome is an annual grass from Eurasia. This alliance accounts for the largest acreage of grassland vegetation in cismontane California. Stands in our area contain *Aria caryophylla*, *Cynosurus echinatus*, *Dichelostemma multiflorum*, *Erodium botrys*, *Limnanthes douglasii*, *Taeniantherum caput-medusae*, and *Baccharis pilularis* shrubs.

Cynosurus echinatus Semi-Natural Herbaceous Stands Annual Dogtail Grasslands; (Membership Rules *Cynosurus echinatus* >50% relative cover with other non-natives in the herbaceous layer.

Cynosurus echinatus is dominant or co-dominant with other non-natives in the herbaceous layer. Emergent Trees and shrubs may be present. Herbs < 50cm; cover is intermittent to continuous. Native plants associated with *Cynosurus echinatus* stands include *Achaatherum lemmonii*, *Bromus carinatus*, *Danthonia californica*, *Elymus glaucus*, *Eschscholzia californica*, *Hemizonia congesta*, *Lotus micranthus*, *Lupinus bicolor* and *Madia* ssp. Non-native plants include *Aira caryophylla*, *Avena* ssp., *Bromus hordeaceus*, *Bromus tectorum*, *Erodium* ssp., *Poa pratensis*, *Rumex acetosella*, *Taeniantherum caput-medusae*, and *Taraxacum officinale*.

Lolium perenne Semi-Natural Herbaceous Stands Perennial Rye Grass Field; (Membership Rules *Lolium perenne* > 50% relative cover, native plants < 15% relative cover). *Lolium perenne* is a non-native grass from Europe introduced into temperate regions throughout the world. It is an annual or a perennial, cool-season bunch grass.

Woodland Alliance (Cismontane Woodland)

Woodland Alliances are characterized by a dominant tree overstory and different degrees of understory development. The project woodland alliance appears to be of a relatively mature Blue Oak age class with very little regeneration. The lack of a varied age class of canopy species is apparently a result of modified fire regime and historic land use as pasturelands. The shrub understory is limited to a few living and dead manzanita. The herbaceous layer is limited presumably to grazing.

Quercus douglasii Woodland Alliance Blue Oak Woodland; *Quercus douglasii* is dominant or co-dominant tree in the canopy with *Aesculus californica*, *Pinus sabiniana*, *Quercus agrifolia*, *Q. lobata* and *Q. wislizeni* (Membership Rules *Quercus douglasii* >50% relative cover in the tree canopy; other hardwoods or conifers may be >30% relative cover in the tree canopy). Trees > 20 m; with conifers < 35 m. Shrub layer is sparse to intermittent. Herbaceous layer is sparse or grassy, and forbs are present seasonally. *Quercus douglasii* is a deciduous, drought and flood tolerant tree that grows to 20 m in height. The canopy is intermittent to continuous or savanna-like. The alliance establishes in varied stands and form one of the most extensive and conspicuous vegetation types in the state.

The Department of Fish and Game Wildlife and Habitat Data Analysis Branch Vegetation Classification and Mapping Program List of California Terrestrial Natural Communities Recognized by The DFG California Natural Diversity Database September 2003 edition and the DFG Vegetation Classification and Mapping Program List of California Vegetation Alliances October 22, 2007, classify the project site respectively as Broad Leafed Upland Tree Dominated - # 70.000.00 and further described as Blue Oak Woodland (*Quercus douglasii*) - #71.020.00 and specifically as Blue Oak Woodland-Coast Live Oak/Grass - # 71.020.01 and as *Quercus douglasii*: Alliance: California Level of # 71.020.00, with a Global Alliance of # 614 and with a rarity of G 4 S4 (=global and state as common enough to not be of concern).



Figure 1. Blue Oak Woodlands on the project site of Pond One.



Figure 2. Northwest end of the ridge where Pond One will be located.



Figure 3. Southeast end of the ridge proposed for Pond One.



Figure 4. Storage area that is part of the site for Pond One.



Figure 5. Grasslands and Oak Woodlands where Pond Two will be located.



Figure 6. Drainage that flows through footprint of Pond Three.



Figure 7. View upslope of the site for Ponds Two and Three.



Figure 8. View upslope of the drainage that bisects Pond Three.



Figure 9. Location of Pump House Pad, which is part of the project.

C.2 Surrounding Biological Resources

The aerial photograph Plate III, illustrates the site and the surrounding environment. The environmental setting of the project site consists of:

- On the north side of the project – Open undeveloped Semi-natural Grasslands, and Oak Woodlands;
- On the east side of the project – Oak Woodlands, NBRID holding pond and Spray Field;
- On the south side of the project – Open undeveloped, Oak Woodlands; and
- On the west side of the project – Steele Valley Road, Semi-natural Grasslands, Oak Woodlands, and Lake Berryessa.

C.3 Napa County Defined Drainage

The project site is traversed by a seasonal unnamed drainage that is a tributary to Lake Berryessa.

Napa County Defined Drainage definition is a watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey maps most recently published, or any replacement to that symbol, and or any watercourse which has a well-defined channel with a depth greater than four feet and banks steeper than 3:1 and contains hydrophilic

vegetation, riparian vegetation or woody-vegetation including tree species greater than ten feet in height.

The drainage does not appear on the U.S.G.S. Topographic Map as a blue line, and it does not meet the definition of Napa County Drainage. This drainage does have bed and bank and connectivity to Lake Berryessa and, therefore is within the jurisdiction of DFG and ACOE as “Waters of the State”.

D RESULTS AND FINDINGS

The results and findings discussed below are based on our on-site field review and background materials available for the project.

D.1 Special-Status Species

A map from the DFG CNDDDB for the records of special-status species known for proximity of the project is shown on Plate II. These taxa listed as well as those listed in Appendix C constitute “Target Species” or Organisms that are part of the scoping for the project site and property. Species listed in Appendix C are those that are within the Quadrangle and surrounding Quadrangles. Reference sites were reviewed as part of our scoping for some of the “Target” Organisms.

Tables I and II below provide a list of potential “target” species that are known to occur (DFG CNDDDB- 5 mile search) and the results of our field studies. The table includes an analysis / justification for concluding absence as supported by our fieldwork.

Table I. Analysis of special-status plants. The taxa included in the table are selected based on the habitat present and the DFG CNDDDB records for the area of the project (see also Appendix C and Plate II).

Common Name	Scientific Name	Plant Habitat Association	Flower Period	Found on or Around Project Site	Justification For Negative Findings
Napa False Indigo	<i>Amorpha californica</i> var. <i>napensis</i>	Cismontane Woodland	April-July	No	Requisite habitat absent on the site or in the immediate vicinity.
Clara Hunt’s Milk-Vetch	<i>Astragalus clarianus</i>	Cismontane Woodland, Valley and Foothill Grassland	March-April	No	Requisite micro-habitat, edaphic requirements, native vegetation associates and exposure not present.
Jepson’s Milk-Vetch	<i>Astragalus rattanii</i> var. <i>jepsonianus</i>	Cismontane Woodland, Valley and Foothill Grassland	April-June	No	Requisite habitat absent on the site or in the immediate vicinity.
Narrow-anthered California Brodiaea	<i>Brodiaea californica</i> var. <i>leptandra</i>	Broadleaved upland forest, chaparral, elevation 110-915 meters	May-July	No	Requisite habitat and vegetation associates absent on the site or in the immediate vicinity.

Common Name	Scientific Name	Plant Habitat Association	Flower Period	Found on or Around Project Site	Justification For Negative Findings
Rincon Ridge Ceanothus	<i>Ceanothus confusus</i>	Chaparral	Feb-March	No	Requisite habitat and vegetation associates absent on the site or in the immediate vicinity
Calistoga Ceanothus	<i>Ceanothus divergens</i>	Chaparral serpentinite	Feb-March	No	Not known for area. Requisite habitat and vegetation associates absent on the site or in the immediate vicinity.
•Holly-leaved Ceanothus	<i>Ceanothus purpureus</i>	Chaparral	Feb-June	No	Requisite habitat and vegetation associates absent on the site or in the immediate vicinity.
Pappose Tarplant	<i>Centromadia (=Hemizonia) parryi</i> ssp. <i>rudis</i>	Grasslands	May-July	No	Requisite habitat and vegetation associates absent on the site or in the immediate vicinity.
•Serpentine Cryptantha	<i>Cryptantha clevelandii</i> var. <i>dissita</i>	Chaparral serpentinite	April-June	No	Requisite habitat and vegetation associates absent on the site or in the immediate vicinity
•Dwarf Downingia	<i>Downingia pusilla</i>	Wetlands	March-May	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Green's Narrow-leaved Daisy	<i>Erigeron greenei</i>	Chaparral serpentinite	May-Sept.	No	Requisite slope exposure, edaphic habitat and vegetation associates absent on the site or in the immediate vicinity.
Loc Lomond Button-celery	<i>Eryngium constancei</i>	Vernal Pools	April-June	No	Requisite edaphic habitat absent on the site or in the immediate vicinity precludes presence.
•Two-carpellate Western Flax	<i>Hesperolinon bicarpellatum</i>	Chaparral Serpentinite	May-July	No	Edaphic habitat not present.
•Brewer's Western Flax	<i>Hesperolinon breweri</i>	Chaparral Serpentinite	May-July	No	Edaphic habitat not present.

Common Name	Scientific Name	Plant Habitat Association	Flower Period	Found on or Around Project Site	Justification For Negative Findings
•Tehama County Western Flax	<i>Hesperolinon tehamense</i>	Chaparral Serpentine	May-July	No	Requisite edaphic habitat absent on the site precludes presence
California Black Walnut	<i>Juglans hindsii</i>	Riparian	April-May	No	Species not observed.
Contra Costa Goldfields	<i>Lasthenia conjugens</i>	Vernal Pools	March-June	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Colusa Layia	<i>Layia septentrionalis</i>	Cismontane Woodland, Valley and Foothill Grassland, Serpentine	April-May	No	Requisite edaphic habitat absent on the site or in the immediate vicinity.
•Jepson's leptosiphon	<i>Leptosiphon jepsonii</i> = <i>Linanthus jepsonii</i>	Chaparral, cismontane woodland usually volcanic	April-May	No	Requisite habitat and vegetation associates absent on the site or in the immediate vicinity.
Cobb Mt. Lupine	<i>Lupinus sericatus</i>	Chaparral, Cismontane Woodland	March-June	No	Requisite habitat absent on the site or in the immediate vicinity.
Mt. Diablo Cottonweed	<i>Micropus amphibolus</i>	Cismontane Woodland	March-May	No	Requisite habitat absent on the site or in the immediate vicinity.
•Robust Monardella	<i>Monardella villosa</i> ssp. <i>globosa</i>	Chaparral	June-July	No	Absence of typical habitat and vegetation associates.
Baker's Navarretia	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Cismontane Woodland, Valley and Foothill Grassland	May-July	No	Requisite micro-habitat absent on the site or in the immediate vicinity.
•Few Flowered Navarretia	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	Vernal pools	May-June	No	Requisite aquatic habitat absent on the site or in the immediate vicinity.
Gairdner's Yampah	<i>Perideridea gairdneri</i> ssp. <i>gairdneri</i>	Cismontane Chaparral, Valley foothill grassland, vernal pools	June – October	No	Requisite mesic habitat absent on the site or in the immediate vicinity.

Common Name	Scientific Name	Plant Habitat Association	Flower Period	Found on or Around Project Site	Justification For Negative Findings
Calistoga Popcorn-flower	<i>Plagiobothrys strictus</i>	Valley and Foothill Grassland, Vernal Pools, Alkaline Areas Near Thermal Springs	March-June	No	Requisite mesic edaphic habitat absent on the site or in the immediate vicinity.
Napa Bluegrass	<i>Poa napensis</i>	Valley and Foothill Grassland, Alkaline Areas	May-Aug	No	Requisite edaphic habitat absent on the site or in the immediate vicinity precludes presence.
•Keck's Checkerbloom	<i>Sidalcea kecki</i>	Grass Slopes	April-May	No	Historic grazing of site precludes presence.
Marsh Checkerbloom	<i>Sidalcea ssp. hydrophila</i>	Meadows, Riparian Forests	July-Aug	No	Requisite mesic habitat absent on the site or in the immediate vicinity.
Green Jewel-flower	<i>Streptanthus hesperidis</i>	Chaparral, cismontane woodland serpentinite	May-June	No	Requisite edaphic habitat and vegetation associates absent on the site or in the immediate vicinity.
Showy Indian Clover	<i>Trifolium amoenum</i>	Grassland	April-June	No	Previous site use has eliminated potential for this species.
Oval-leaved Viburnum	<i>Viburnum ellipticum</i>	Chaparral, Cismontane Woodland, Coniferous Forest	May-June	No	Requisite habitat absent on the site or in the immediate vicinity.

• Indicates taxa that are known to occur within five miles of the project site (Plate II).

As shown in the table above the potential special-status plant species recorded for the proximity of the project sites can with a high degree of certainty be eliminated from potential for the project sites based on the lack of hydrology, edaphic (soil conditions) and historic use of the site with concurrent introductions of non-native weed species as well as our findings as a result of our field surveys. As shown in Appendix A the majority of the species present within the project footprint are introduced non-native species that are a result of decades of grazing.

Table II. Analysis of special-status animals. The taxa included in the table are selected based on the habitat present and the DFG CNDDDB records for the area of the project (see also Appendix C, and Plate II).

Common Name	Scientific Name	Habitat	Potential for Project Site	Observed on or Around Project Site	Justification for Negative Findings
Great Egret (Nesting)	<i>Agretta thula</i>	Slow moving water or ponds	No	No	Species not observed. Lack of nesting habitat.
Pallid Bat	<i>Antrozous pallidus</i>	Roosts in buildings and overhangs	May fly over	No	No, lack of habitat.
Townsend's Western Big-eared Bat	<i>Corynorhinus townsendii townsendii</i>	Cliffs caves, old buildings	May fly over	No	Lack of habitat.
• Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	Larva Require Elderberry Plants	No	No	Lack of Elderberry Plants
White-Tailed Kite	<i>Elanus leucurus</i>	Nests in tall trees near water	May fly over	No	Lack of habitat.
Western Pond Turtle	<i>Emys marmorata</i>	Slow moving water or ponds	No	No	Potential in existing pond. Species was not observed.
• American Peregrine Falcon	<i>Falco peregrinus anatum</i>	Nests on cliffs	No	No	Lack of requisite habitat.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Nests in tall trees near water	May fly over	No	Lack of nesting habitat.
Purple Martin	<i>Progne subis</i>	Open Woodland, towns, barns	Potential	No	Species was not observed.
Northern Spotted Owl	<i>Strix occidentalis caurina</i>	Conifer Woodlands	No	No	Lack of habitat.
• Foothill Yellow-legged Frog	<i>Rana boylei</i>	Slow moving streams, deep pools, and ponds.	No	No	Species was not observed in drainage around existing pond.
• California Red-legged Frog	<i>Rana draytonii</i>	Creeks, Rivers with Permanent Flowing Water.	No	No	Pond contained large bull frog populations. No RLF observed.

• Indicates taxa that are known to occur within five miles of the project site (see Plate II).

In the sections below species with the potential to be impacted by the proposed project are discussed in more detail.

***Emys marmorata* (Western Pond Turtle).** The pond turtle is found throughout California and is listed by the State as a Species of Concern. Suitable habitat consists of any permanent or nearly permanent body of water or slow moving stream with suitable refuge, basking sites and nesting sites. Refuge sites include partially submerged logs or rocks or mats of floating vegetation. Basking sites can be partially submerged rocks or logs, as well as shallow-sloping banks with little or no cover. Nesting occurs adjacent to aquatic habitat in upland areas with proper soil moisture content for egg development. No turtles were observed in the wastewater pond on the project site. The grassland and oak woodland habitat below the wastewater pond would not have suitable potential nesting habitat for this species.

***Rana draytonii* (California Red-legged Frog)** The California red-legged frog inhabits permanent or nearly permanent water sources (quiet streams, marshes, and reservoirs). They are highly aquatic and prefer shorelines with extensive vegetation. Low potential habitat exists in the existing treatment pond. Large populations of bull frogs and lack of any vegetation for potential egg attachment limits this pond as potential habitat. The shallow ephemeral drainage channel would also provide poor habitat for this species. There is one known occurrence within five miles of the project site. Critical habitat for this species is not present on the project site.

***Rana boylei* (Foothill Yellow-Legged Frog)** are found in or near rocky streams with riffles and sunny banks in a variety of habitats from sea level to approximately 6,300 feet elevation. Yellow-legged frogs require shorelines with dense, overhanging vegetation such as willow trees. Typically found associated with drainages with permanent water. The project site does not contain habitat for this species.

We did not find any suitable habitat for special-status animal species that are known for the Quadrangle surrounding Quadrangles or for the region associated with the proposed project. The present conditions of the project site are such that there is little reason to expect the occurrence of any special-status animal species within the footprint of the project.

Listed animals are unlikely to utilize habitat at the project site because of the lack of any significant roosting habitat for bats, the absence of suitable aquatic habitat, and the historic use of the property.

D.2 Sensitive Biotic Communities

The Napa County Baseline Data Report defines Biotic communities as the characteristic assemblages of plants and animals that are found in a given range of soil, climate, and topographic conditions across a region. Sensitive biotic communities in the County were identified using a two-step process for the Napa County Baseline Data Report. The two steps were:

1. An existing list of sensitive biotic communities prepared by the California Department of Fish and Game (DFG) (2003a) was first reviewed by senior Jones & Stokes biologists, and those communities that may occur in the County were identified. Because the community names in the DFG list (2003a) did not correspond directly with the names used in the Land Cover Layer, a

determination was made as to which land cover types on the Land Cover Layer correspond to the communities on the DFG list.

2. The aerial extent of each land cover types mapped in the County was generated from the land cover layer. Those biotic communities with an areal extent of less than 500 acres in the County (approximately 0.1% of the County) were identified. These communities were discussed with local experts and their conservation importance established. Those that were not already on the original DFG list and that were determined to be worthy of conservation were added to the list.

The Napa County Baseline Data Report as well as the California Department of Fish and Game Natural Diversity Data Base (DFG CNDDDB) lists recognized Sensitive Biotic Communities. The Napa County Baseline Data Report lists twenty-three communities which are considered sensitive by DFG due to their rarity, high biological diversity, and/or susceptibility to disturbance or destruction. The CNDDDB communities in Napa County are the following:

Serpentine bunchgrass grassland,
Wildflower field (located within native grassland),
Creeping ryegrass grassland,
Purple Needlegrass grassland,
One-sided bluegrass grassland,
Mixed serpentine chaparral,
McNab cypress woodland,
Oregon white oak woodland,
California bay forests and woodlands,
Fremont cottonwood riparian forests,
Arroyo willow riparian forests,
Black willow riparian forests,
Pacific willow riparian forests,
Red willow riparian forests,
Narrow willow riparian forests,
Mixed willow riparian forests,
Sargent cypress woodland,
Douglas-fir-ponderosa pine forest (old-growth),
Redwood forest,
Coastal and valley freshwater marsh,
Coastal brackish marsh,
Northern coastal salt marsh, and
Northern vernal pool.

Napa County biotic communities of limited distribution that are sensitive include:

Native grassland; Tanbark oak alliance; Brewer willow alliance; Ponderosa pine alliance; Riverine, lacustrine, and tidal mudflats; and Wet meadow grasses super alliance.

The grasslands within the footprint of the project do not consist of any of the sensitive grassland communities listed by the County Baseline Data Report or DFG. The vegetation map also illustrates the location of the different alliance on the property.

Native Grassland - Indicators of native grassland which are present around the project site include blue wild rye (*Elymus glauca*). The densities/abundance/cover of this species is such that it does not indicate significant persistent native grassland. The project will not impact any significant populations of native grasslands.

The DFG CNDDDB search shows that the Northern Vernal Pool is the only sensitive plant community for the region. Vernal Pools are a unique habitat known for the region. There are no vernal pools associated with the project site. There are no DFG Sensitive Communities or Napa County Sensitive Biotic Communities present on or near the project site.

D.3 Biological Resources

Distinct biological resources that are limited in nature include, wetlands, Waters of the US, riparian corridors or riparian vegetation, tree and vegetation layers, vegetation diversity, drainages, creeks, springs and seeps provide seasonal water that will support wildlife as well as distinct assemblages of plants that require high moisture.

Seasonal Wetland generally denotes areas where the soil is seasonally saturated and/or inundated by fresh water for a significant portion of the wet season, and then seasonally dry during the dry season. To be classified as “Wetland,” the duration of saturation and/or inundation must be long enough to cause the soils and vegetation to become altered and adapted to the wetland conditions. Varying degrees of pooling or ponding, and saturation will produce different edaphic and vegetative responses. These soil and vegetative clues, as well as hydrological features, are used to define the wetland type. Seasonal wetlands typically take the form of shallow depressions and swales that may be intermixed with a variety of upland habitat types. Seasonal wetlands fall under the jurisdiction of the U.S. Army Corps of Engineers (ACOE).

The existing Tailwater Pond (labeled as Pond 4) will be expanded. This pond is filled with treated wastewater and can be filled with overflow from the irrigation field. Since this pond is filled by artificial means and does not collect any surface water and would dry out by turning off of pumps and closing a valve, therefore it would not be considered ACOE jurisdictional.

There are no seasonal wetlands associated with the project footprint.

“**Waters of the State**” include drainages, which are characterized by the presence of definable bed and bank that meet ACOE, and RWQCB definitions and or jurisdiction.

“**Tributaries to Waters of US**” include drainages, which are characterized by the presence of definable bed and bank that meet ACOE, and RWQCB definitions and or jurisdiction

The unnamed seasonal tributary of Lake Berryessa within the footprint of the project is considered “Waters of State” and “Tributary to Waters of the US”.

Riparian Vegetation is by all standards considered sensitive. Riparian Vegetation functions to control water temperature regulate nutrient supply (biofilters), bank stabilization, rate of runoff, wildlife habitat (shelter and food), release of allochthonous material, release of woody debris which functions as habitat and slow nutrient release, and protection for aquatic organisms. Riparian

vegetation is also a moderator of water temperature has a cascade effect in that it relates to oxygen availability.

The Drainage referenced above has trees and shrubs that by definition has overhanging vegetation which provide shade and there for is considered “riparian” by DFG.

Trees – The project proposed to remove approximate 6-acres of Oak Woodlands. Tree removal by the project will consist primarily of Blue Oaks, and Ghost Pines.

D.4 Wildlife Habitat and Wildlife Corridors

Natural areas interspersed with developed areas are important for animal movement, increasing genetic variation in plant and animal populations, reduction of population fluctuations, and retention of predators of agricultural pests and for movement of wildlife and plant populations. Wildlife corridors have been demonstrated to not only increase the range of vertebrates including avifauna between patches of habitat but also facilitate two key plant-animal interactions: pollination and seed dispersal. Corridors and also preserve watershed connectivity. Corridor users can be grouped into two types: passage species and corridor dwellers. The data from various studies indicate that corridors should be at least 100 feet wide to provide adequate movement for passage species and corridor dwellers in the landscape.

The non-native grassland and ruderal habitat at the site does not provide much habitat value for wildlife. Very few burrows were observed, but small mammals and songbirds most likely utilize these habitats at the site for foraging and cover. There were no significant wildlife corridors identified through the site.

The project as proposed will not negatively impact any migratory corridors or migratory fish on or off site provided standard erosion control measures are implemented.

D.5 Raptor Nests, Bird Rookeries, Bat Roosts, Wildlife Dens or Burrows

Raptors were observed in the area although no raptor nests were identified during our survey. We found no indications of nesting raptors on the property or in the near vicinity of the project sites. We did not observe any nests, whitewash or nest droppings, perching associated with the project site.

No bird rookeries were present on the property or within the project footprint. No raptor nests or whitewash from nests was observed.

The site does not contain any significant natural roosting habitat for bat species (i.e. mines, caves, riparian woodlands). Mature oaks on the property have the potential to support limited roosting habitat. Construction activities associated with the proposed project will not significantly impact or disturbed bat roosting habitat.

No evidence of bat roosting was observed.

Very few burrows were observed, but small mammals and songbirds likely utilize habitats on the project site for foraging and cover.

No significant wildlife dens or burrows were observed.

D.6 Unique Species that are Endemic, Rare or Atypical for the Area

The flora and fauna present are typical for grazed grasslands and woodlands of region. We found no evidence that would indicate the proposed project footprint would impact any unique species or local endemic populations.

There were no unique species, endemic populations of plants or animals or species that are rare or atypical for the area present on the project site.

D.7 Habitat Fragmentation

The proposed project will remove a small portion of Oak Woodlands habitat in relation to the surrounding habitat and area. Removal of this habitat will not significantly impact wildlife in the area.

The project will not result in significant habitat fragmentation.

D.8 Cumulative Biological Effects

Cumulative biological effects are the result of incremental losses of biological resources within a region. The site location, historic development and use of the area within the footprint of the project negate the potential for cumulative biological resource effects. The project development is proposed for an area of the property that has had a long historic use. There is nothing to indicate that there will be any cumulative biological impacts of the project.

There is no evidence that any negative cumulative biological effects will result from the proposed project.

D.9 State and Federal Permits Needed

The drainage within the footprint of Pond # 3 meets the definition of “Waters of the State” and also “Tributary to Waters of the US.” Permit applications from DFG, ACOE and the RWRCB will need to include appropriate habitat mitigation for impact to the seasonal drainage including the removal of overhanging canopy along the drainage

Impacts to the seasonal unnamed drainage within the footprint of Pond # 3 will require permits.

The existing Tailwater Pond does not collect any surface water and would dry out by turning off of pumps and closing a valve, therefore it would not be considered ACOE jurisdictional. This pond is devoid of vegetation along its banks and does not provide habitat for native species, therefore would not be within DFG’s jurisdiction.

E. RECOMMENDATIONS

E.1 Significance

The significance of potential impacts is a function of the scope and scale of the proposed project within the existing Federal, State and Local regulations and management practices. The determination of significance of impacts to biological resources consists of an understanding of the project as proposed and an evaluation of the context in which the impact may occur. The extent and degree of any impact on-site or off-site must be evaluated consistent with known or expected site conditions. Therefore, the significance of potential impacts is assessed relevant to a site-specific scale and the larger regional context.

The project's effect on onsite or regional biological resources is considered to be significant if the project results in:

- Alteration of unique characteristics of the area, such as sensitive plant communities and habitats (i.e. serpentine habitat, wetlands, riparian habitat);
- Adverse impacts to special-status plant and animal species;
- Adverse impacts to important or vulnerable resources as determined by scientific opinion or resource agency concerns (i.e. sensitive biotic communities, special status habitats; e.g. wetlands);
- Loss of critical breeding, feeding or roosting habitat; and
- Interference with migratory routes or habitat connectivity.

E.2 Potential Impacts and Recommendations

The property and project site conditions are such that there is no reason to expect any impacts to special-status species on-site or off-site provided standard construction practices are utilized and the erosion control plan is implemented.

The project must comply with Napa County SWPPP requirements to ensure that best management practices are adopted in order to minimize the amount of sediment and other pollutants leaving the site during construction activities.

The project as proposed will impact "Waters of the State" and will require consultation and permits from the Army Corps of Engineers (ACOE), Department of Fish and Game (DFG), and Regional Water Quality Control Board (RWQCB) will be required.

The project will remove approximately +/- 6-acres of native Oak trees. The project must comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland communities.

Trees surrounding the project to be retained should be provided with exclusionary fencing. Fencing should be at a minimum of four feet in height and clearly marked to prevent inadvertent encroachment by heavy machinery. Fencing should be installed either at the edge of the trees

dripline, or at the edge of the construction zone. All fencing should be in place prior to any site grading and prohibit all access to fenced areas.

No raptor nests were observed during any of the site visits. There is still the potential for raptors to nest in the area. Although no raptor nests were observed raptors have the potential to begin nesting at the site. If raptors move into the site close to construction activities there is the potential to disturb them during nesting.

For ground disturbing activities occurring during the breeding season (February 15 to August 31), a qualified wildlife biologist should conduct pre-construction surveys of all potential nesting habitat for birds within 500 feet of earthmoving activities. Surveys should be conducted within 14 days prior to tree removal and or ground-breaking activities on the project site. If active bird nests are found during preconstruction surveys the project applicant should consult and obtain approval for appropriate buffers with the California Department of Fish and Game prior to tree removal and or ground-breaking activities or until it is determined that all young have fledged.

All project construction activities must be limited to the project footprint. Best Management Practices including silt and erosion control measures must be implemented to protect off-site movement of sediment and dust during and post construction. Best Management Practices must be implemented throughout the construction period such as retaining ground cover litter, monitoring for invasive species, providing mulch for bare ground and standard erosion and dust control.

F. SUMMARY

The project as proposed will impact “Waters of the State” state and federally protected waters as defined by Section 404 of the Clean Water Act through direct filling (Proposed Pond #3).

The existing Tailwater Pond does not collect any surface water and would dry out by turning off of pumps and closing a valve, therefore it would not be considered ACOE jurisdictional. This pond is devoid of vegetation along its banks and does not provide habitat for native species, therefore would not be within DFG’s jurisdiction.

The proposed project will impact a drainage, which is considered a sensitive natural community, and regulated by California Department of Fish and Game (CDFG). The project will result in the loss of riparian habitat along the section of the drainage that will be re-routed around the project.

The project will remove approximately 6-acres of oak woodlands.

We find that the proposed project with proper erosion control measures will not:

- 1) Have an effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFG or USFWS. There is no habitat for special status plants or animal species on the proposed project site. Site present conditions and history of use reasonably precludes presence of any special-status species on the project site.
- 2) No sensitive biotic communities or Napa County biotic communities of limited distribution are present on the project site.
- 3) Interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- 4) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan provided the loss of riparian habitat on the unnamed tributary within Pond Three is mitigated.

We conclude that the proposed project with the implementation of standard construction practices, appropriate permits from agencies for impact to “Waters of the State” will not result in any significant adverse biological impacts to the environment.

G. REFERENCES

- Arora, David, 1986. Mushrooms Demystified. Ten Speed Press.
- Bailey, L. H., 1951. Manual of Cultivated Plants. The MacMillan Company New York.
- Baldwin, B.G., D.H. Goldman, D.J.Keil, R.Patterson, T.J.Rosati, and D.H.Wilkins, editors, 2012. The Jepson Manual Vascular Plants of California. U.C. Berkley Press
- Barbe, G. D. 1991. Noxious Weeds of California. Department of Food and Agriculture, Sacramento, CA.
- Beidleman, L. H and E. N. Kozloff, 2003. Plants of the San Francisco Bay Region. University of California Press, Berkeley. Best, Catherine, et al. 1996. A Flora of Sonoma County, California Native Plant Society.
- Brodo, Irwin M., Sylvia Duran Sharnoff and Stephen Sharnoff, 2001. Lichens of North America. Yale University Press. 795 pp.
- California Department of Fish and Game, Revised May 8, 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.
- California Department of Fish and Game Natural Diversity Data Base Rare Find 3. June 1, 2012.
- California Native Plant Society 2001. Inventory of Rare and Endangered Plants of California. Special Publication No 1, Sixth Edition.
- California Native Plant Society Electronic Inventory of Rare and Endangered Vascular Plants of California, Current Online.
- California Native Plant Societ, Botanical Survey Guidelines (Revised June 2, 2001).
- Crain, Caitlin Mullan and Mark D. Bertness, 2006. Ecosystem Engineering Across Environmental Gradients: Implications for Conservation and Management. BioScience March Vol. 56 No.3, pp. 211 to 218.
- DiTomaso, Joseph M. and Evelyn A. Healy, 2007. Weeds of California and Other Western States Vol. 1 and 2. University of California Agriculture and Natural Resources Publication 3488.
- Federal Interagency Committee for Wetland Delineation. 1989. Federal Manual for Identifying and Delineating Jurisdictional Wetlands. U. S. Army, Corps of Engineers, U. S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington, D. C. Cooperative technical publication. 76 pp. plus appendices.
- Grinnell, Joseph, Joseph Dixon, and Jean M. Linsdale. 1937. Fur-bearing Mammals of California. University of California Press.
- Hale, Mason Jr. and M. Cole, 1988. Lichens of California. UC Press, Berkeley
- Hemphill, Don, Gilbert Muth, Joe Callizo, et al. 1985. Napa County Flora. Gilbert Muth Pacific Union College, Angwin, California 94508.
- Hitchcock, A. S. 1950 Manual of the Grasses of the United States. U. S. Government Printing Office, Washington D. C.
- Holland, Robert. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Game, Sacramento, CA.
- Ingles, Lloyd C., 1985. Mammals of the Pacific States. Stanford Press.
- Jameson, E. W. and H. J. Peeters, 2004. Mammals of California. Revised Edition. U.C. Press.
- Kruckeberg, Arthur R. 1984. California Serpentes: Flora, Vegetation, Geology, Soils and Management Problems. University of California Publications in Botany, Volume 78. University of California Press, LTD.
- Lawton, E., 1971. Moss Flora of the Pacific Northwest, Hattori Botanical Laboratory Nichinan, Miyazaki, Japan, pp. 1 to 362 plates 1 to 195.

- Lyons, R. and J. Ruygt. 1996 100 Napa County Roadside Wildflowers. Stonecrest Press, Napa, California.
- Matthews, Mary Ann, 1997. An Illustrated Field Key to the Flowering Plants of Monterey County. California Native Plant Society.
- Malcolm, Bill and Nancy, Jim Shevock and Dan Norris, 2009 California Mosses, Micro Optics Press, Nelson New Zealand, pp. 1 to 430.
- Malcolm, Bill and Nancy, 2000 Mosses and Other Bryophytes An Illustrated Glossary, Micro Optics Press, Nelson New Zealand, pp 1 to 220.
- Mason, Herbert L. 1957. A Flora of the Marshes of California. UC California Press.
- Moyle, Peter B. 1976. Inland Fishes of California. University of California Press.
- Napa County Conservation, Development and Planning Department, November 30, 2005. Napa County Baseline Data Report.
- Naiman R J, Decamps H, Pollock M. 1993. The role of riparian corridors in maintaining regional biodiversity. *Ecological Application* 3: 209-212.
- Norris, Daniel H. and James R. Shevock, 2004. Contributions Toward a Bryoflora of California: I. A specimen-Based Catalogue of Mosses. *Madrono* Volume 51, Number 1, pp. 1 to 131.
- Norris, Daniel H. and James R. Shevock, 2004. Contributions Toward a Bryoflora of California: II. A Key to the Mosses. *Madrono* Volume 51, Number 2, pp. 1 to 133.
- Peterson, Roger T. 1961, 1990. A Field Guide to Western Birds. Houghton Mifflin Co., Boston, MA.
- Peters, Hans and Pam Peters, 2005. Raptors of California California Natural History Guides. University of California Press, Berkeley and Los Angeles.
- Sawyer, J. O., T. Keeler-Wolf and Julie M. Evans 2009. A Manual of California Vegetation Second Edition California Native Plant Society, Sacramento, California.
- Schoenherr, Allan A. 1992. A Natural History of California. California Natural History Guides: 56. University of California Press, Berkeley.
- Schofield, W. B. 1969. Some Common Mosses of British Columbia. British Columbia Provincial Museum, Victoria, Canada.
- Schofield, W. B. 2002. Field Guide to Liverwort Genera of Pacific North America. University of Washington Press.
- Stebbins, Robert C., 1966. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin.
- Stewart, John D and John O. Sawyer, 2001 Trees and Shrubs of California. University of California Press.
- Summit Engineering June 7, 2012 Project No. 2011152 Berryessa Resort Improvement District Wastewater Treatment System CEQA/NEPA Project Description pp 1 to 5.
- Wetland Training Institute, Inc. 1991 Field Guide for Wetland Delineation: Corps of Engineers Manual. WTI 91-2 133pp.
- Wilson, Barbara L., et al., 2008. Field Guide to the Sedges of the Pacific Northwest. Oregon State University Press, Corvallis Oregon.
- U. S. Army Corps of Engineers 2012 Wetland Inventory List. Wetland Plants. Arid West Final Draft Ratings US Army Corps of Engineers, Corps Regions research and Engineering Laboratory

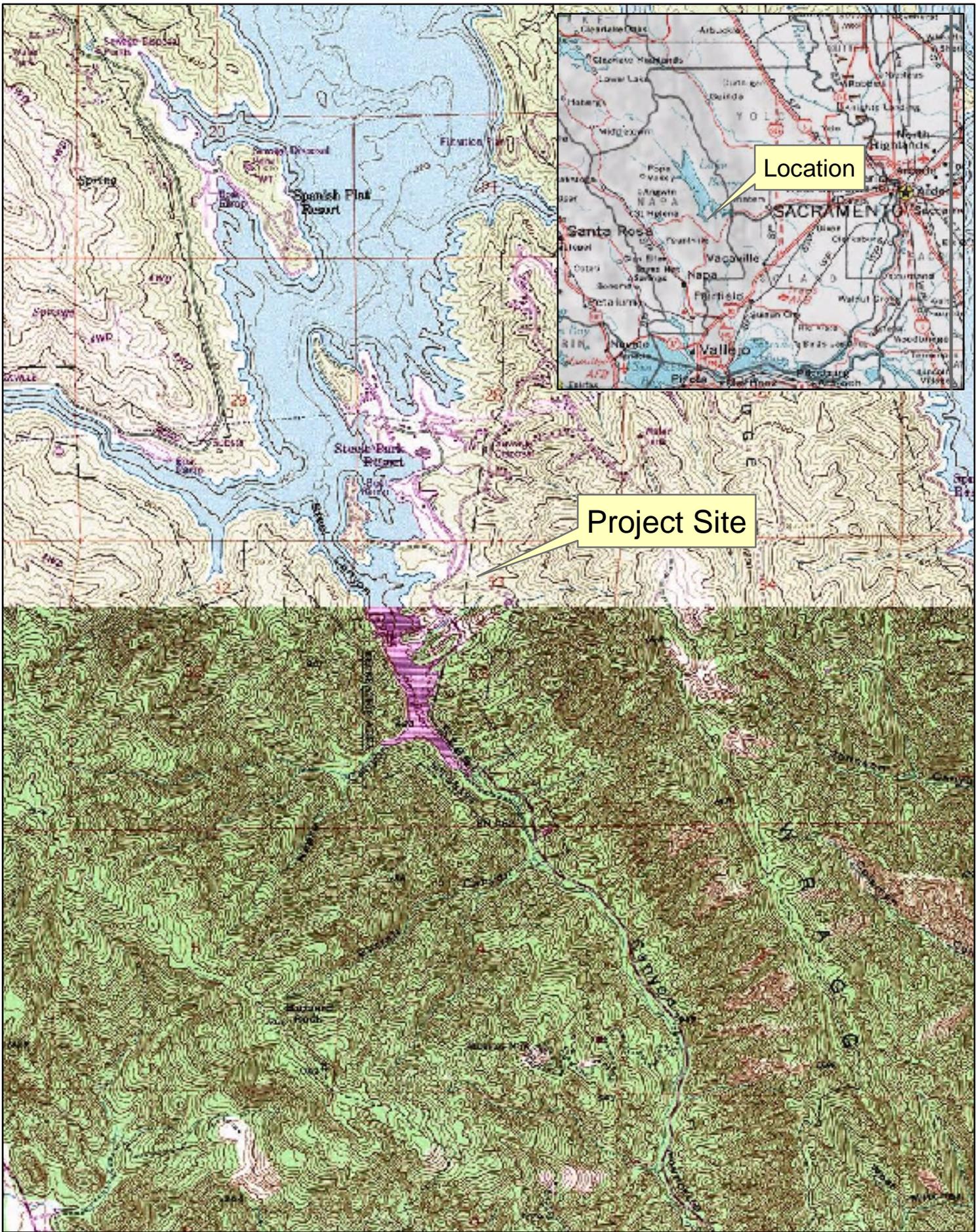


Plate I. Site / Location Map

(Lake Berryessa Quadrangle)



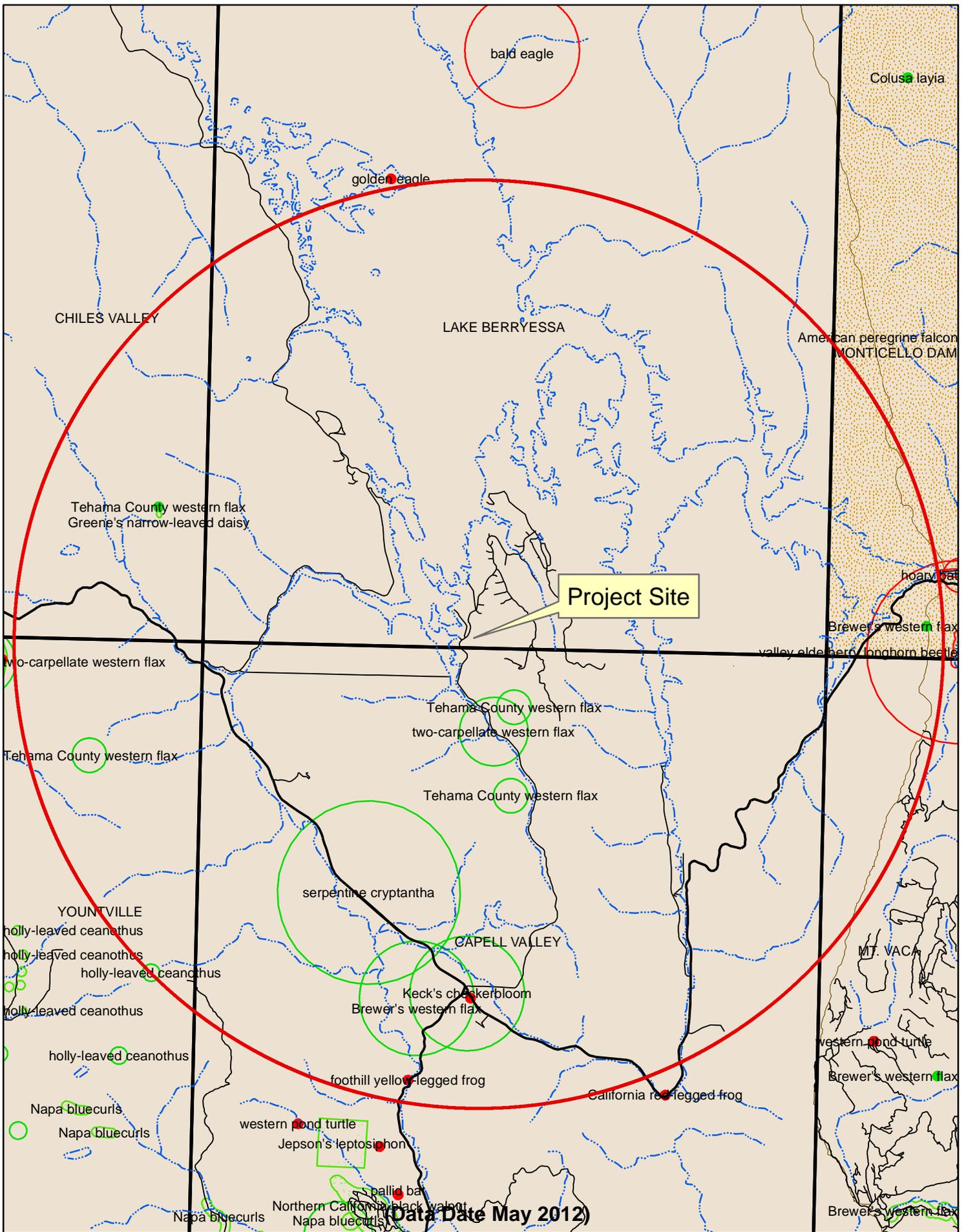


Plate II DFG CNDDDB 5-Mile Search





- Area of Impact
- Grassland Alliance
- Woodlands Alliance
- Open Water
- Disturbed

Plate III. Aerial Photo / Vegetation Map



	Area of Impact
	Woodlands Alliance
	Waters of the State

APPENDIX A
Plants and Animals Observed Associated With
The Project Site

PLANTS

The nomenclature for the list of plants found on the project site and the immediate vicinity follows: Brodo, Irwin M., Sylvia Duran Sharnoff and Stephen Sharnoff, 2001, for the lichens; Arora -1985, for the fungi; S Norris and Shevrock - 2004, for the mosses; and Baldwin, B.G., D.H. Goldman, D.J.Keil, R.Patterson, T.J.Rosati, and D.H.Wilkins, editors, 2012 - for the vascular plants.. The plant list is organized by major plant group.

Habitat type indicates the general associated occurrence of the taxon on the project site or in nature.

Abundance refers to the relative number of individuals on the project site or in the region.

MAJOR PLANT GROUP

Family

<u>Genus</u>	<u>Habitat Type</u>	<u>Abundance</u>
<u>Common Name</u>		

NCN = No Common Name, * = Non-native, @= Voucher Specimen

FUNGI

Basidiomycota- Club Fungi

POLYPORACEAE

<i>Trametes versicolor</i> Turkey Tail	Woodlands on Dead Wood	Common
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TREMELLALES

<i>Exidia glandulosa</i> Black Witch's Butter	Woodland on Dead Wood	Occasional
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<i>Tremella foliacea</i> Brown Witch's Butter	Woodland on Dead Wood	Occasional
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MOSSES

MINACEAE

<i>Alsia californica</i> (W.J.Hooker&Arnott) Sullivant On Trees NCN		Common
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<i>Bryum capillare</i> Hedw. NCN	Ruderal	Common
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<i>Homalothecium nuttallii</i> (Wilson) Jaeger Epiphytic on Trees NCN		Common
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<i>Orthotrichum lyellii</i> Hook & Tayl. NCN	Woodlands, Upper Canopy	Common
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<i>Scleropodium touretii</i> (Brid.) L Koch.Woodlands NCN		Common
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LICHENS

FOLIOSE

<i>Flavoparmelia caperata</i> (L.) Hale NCN	On Oaks	Common
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<i>Flavopunctilia flaventor</i> (Stirt.) Hale NCN	On Oaks	Common
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MAJOR PLANT GROUP**Family**

Genus	Habitat Type	Abundance
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<i>Melanelia disjuncta</i> (Erichsen) Essl.	On Bark	Common
NCN		
<i>Parmelia sulcata</i> Taylor	On Oaks	Common
NCN		
<i>Phaeophysica hispidula</i> (Ach.) Essl.	On Bark, Rocks	Common
NCN		
<i>Physcia adscendens</i> (Fr.) H. Olivier	On Oaks	Common
NCN		
<i>Physcia tenella</i> (Scop.) DC.	On Oaks	Common
NCN		
@ <i>Physconia enteroxantha</i> (Nyl.) Poelt	On Bark of Oaks or On Rocks	Common
Yellow Edged Frost Lichen		
<i>Xanthoria polycarpa</i> (Hoffm.) Rieber	On Oaks Young Twigs	Common
NCN		
<i>Xanthoparmelia mexicana</i> (Gyeln.) Hale	On Rocks	Common
NCN		
FRUTICOSE		
<i>Cladonia</i> ssp.	On Soil	Common
NCN		
<i>Cladonia coniocrata</i> (Flörke) Spreng.	On Soil	Occasional
Common Powderhorn		
<i>Cladonia pyxidata</i> (L.) Hoffm.	On Soil	Occasional
NCN		
<i>Evernia prunastri</i> (L.) Ach.	On Oaks	Common
NCN		
<i>Ramalina farinacea</i> (L.) Ach.	On Oaks	Common
NCN		
<i>Ramalina menziesii</i> Taylor non Tuck.	On Oaks	Common
NCN		
<i>Teloschistes chrysophthalmus</i> (L.) Th. Fr.	On Oaks	Common
NCN		
CRUSTOSE		
<i>Buellia disciformis</i> (Fr.) Mudd	On Rocks, Tree Limbs	Common
NCN		
<i>Leconora muralis</i> (Schreb.) Rabenh.	On Rocks	Common
NCN		
@ <i>Lepraria lobificans</i> Nyl.	On Blue Oak Bark	Occasional
NCN		
<i>Leicidia atrobrunnea</i> (Ramond ex Lam. & DC.) Schaer.	On Rocks	Common
NCN		

MAJOR PLANT GROUP		
Family		
Genus	Habitat Type	Abundance
Common Name		

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<i>Ochrolechia orgonensis</i> H. Magn.	On Bark	Common
NCN		
<i>Pertusaria armara</i> (Ach.) Nyl.	On Oaks	Common
NCN		

VASCULAR PLANTS FERNS

PTERIDACEAE

<i>Pellaea andromedifolia</i> (Kaulf.) Fee	Woodlands	Occasional
Coffee Fern		

VASCULAR PLANTS DIVISION CONIFEROPHYTA--GYMNOSPERMS

PINACEAE

<i>Pinus sabiniana</i> Douglas	Dry Ridges	Occasional
Digger Pine, Gray or Foothill Pine		

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS

CLASS--DICOTYLEDONAE- TREES

EUDICOTS

FAGACEAE Oak Family

<i>Quercus douglasii</i> Hook.&Arn.	Woodlands	Common
Blue Oak (Hybridizes with <i>Q. garryana</i> and <i>Q. lobata</i>)		
<i>Quercus wislizenii</i> A.D.C.	Woodlands	Occasional
Interior Live Oak		
<i>Quercus lobata</i> Nee.	Valley Grasslands	Common
Valley Oak		

JUGLANDACEAE Walnut Family

* <i>Juglans nigra</i> L.	Ruderal Escape	Common
Black Walnut		

MYRTACEAE Myrtle family

* <i>Eucalyptus globulus</i> Labill	Ruderal Escape	Occasional
Blue Gum		

PLATANACEAE Sycamore Family

<i>Platanus racemosa</i> Nutt.	Dry Stream Beds	Occasional
Western Sycamore		

SALICACEAE Willow Family

<i>Populus fremontii</i> S.Watson ssp. <i>fremontii</i>	Riparian	Occasional
Fremont Cottonwood		

MAJOR PLANT GROUP**Family****Genus****Habitat Type****Abundance****Common Name**

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VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS**CLASS--DICOTYLEDONAE-SHRUBS AND WOODY VINES****EUDICOTS**

ERICACEAE Heath Family

Arctostaphylos glandulosa ssp. *glandulosa* Chaparral-Near Coast Common
 Eastwood Manzanita-Glaucous Leaf

ROSACEAE Rose Family

Adenostoma fasciculatum Hooker&Arn. Shrub/Scrub Common
 Chamise

Cercocarpus betuloides Nutt. var. *betuloides* Shrub/Scrub, Chaparral Common
 Mountain-mahogany

Heteromeles arbutifolia (Lind.) M. Rome. Shrub/Scrub Common
 Christmas Berry, Toyon

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS**CLASS--DICOTYLEDONAE-HERBS****EUDICOTS**

APIACEAE (Umbelliferae) Carrot Family

Sanicula crassicaulis DC. Woodlands Common
 Pacific Sanicle

**Torilis arvensis* (Huds.) Link Grasslands Woodlands Common
 Hedge-parsley

ASTERACEAE (Compositae) Sunflower Family

Achillea millefolium L. Ruderal Common
 Yarrow

Calycadenia micrantha (R.L.Carr&G.D. Carr Grassland Open Hillsides Common
 Small-flowered Calycadenia

**Carduus pycnocephalus* L. subsp. *pycnocephalus* Woodlands Common
 Italian Thistle

**Centaurea solstitialis* L. Grasslands, Ruderal Common
 Yellow Star Thistle

**Cirsium vulgare* (Savi) Ten. Grasslands, Ruderal Common
 Bull Thistle

**Hypochaeris glabra* L. Ruderal Common
 Cat's Ear

**Hypochaeris radicata* L. Ruderal Common
 Harry Cat's Ear

Madia exigua (Sm.) A.Gray Grasslands Common
 Threadstem Madia, Tarweed

**Logifla gallica* (L.) Cros&Germ Ruderal Grasslands Occasional
 Herba Impa, Daggerleaf Cottonrose (= *Filago gallica*)

MAJOR PLANT GROUP**Family**

Genus	Habitat Type	Abundance
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<i>Micropus californicus</i> var. <i>californicus</i> Fisch.&C.A.Mey	Grasslands, On Roads	Occ.
Slender Cottonweed		
* <i>Senecio vulgaris</i> L.	Ruderal	Occasional
NCN		
* <i>Taraxacum officinale</i> F.H.Wigg	Ruderal	Common
Dandelion		
BORAGINACEAE Borage or Waterleaf Family		
<i>Amsinckia menziesii</i> (Lehm) Nelson&Macbr.	Grasslands	Occasional
Rancher's Fireweed		
BRASSICACEAE Mustard Family		
* <i>Brassica nigra</i> (L.) Koch	Ruderal	Common
Black Mustard		
* <i>Cardamine hirsuta</i> L.	Ruderal	Common
Bitter-cress		
* <i>Sisymbrium officinalis</i> L.	Ruderal, Grasslands	Common
Hedge Mustard		
CARYOPHYLLACEAE Pink Family		
* <i>Silene gallica</i> L.	Ruderal/Grasslands/oak Woodlands	Common
Small Flower Catchfly Windmill Pink		
* <i>Stellaria media</i> (L.) Vill.	Ruderal	Common
Chickweed		
EUPHORBIACEAE Spurge Family		
<i>Croton setigerus</i> Hook.	Ruderal	Common
Turkey Mullein, Dove Weed (= <i>Eremocarpus setigerus</i>)		
FABACEAE (Leguminosae) Legum Family		
<i>Lathyrus vestitus</i> Nutt. var. <i>vestitus</i>	Woodlands	Occasional
Hillside Pea		
* <i>Lotus corniculatus</i> L.	Grasslands, Ruderal	Common
Birdfoot Trefoil		
<i>Lupinus bicolor</i> Lindl.	Grassland	Common
Miniature lupine		
* <i>Medicago arabica</i> (L.) Huds	Ruderal	Common
Spotted Bur Clover		
* <i>Medicago polymorpha</i> L.	Ruderal, Grasslands	Common
California Bur Clover		
* <i>Trifolium campestre</i> Schreb.	Grasslands	Common
Hop-clover		
* <i>Trifolium hybridum</i> L.	Ruderal	Common
Alsike Clover		
* <i>Vicia sativa</i> L. subsp. <i>nigra</i>	Grasslands, Ruderal	Common
Narrow Leaved-vetch		

MAJOR PLANT GROUP**Family**

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Common Name		

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GENTIANACEAE Gentianaceae Family

<i>Centaurium muehlenbergii</i> (Griseb.) Mans.	Ruderal/Woodlands	Common
Centaury		

GERANIACEAE Geranium Family

* <i>Erodium botrys</i> (Cav.) Bertol.	Grasslands	Common
Broadleaf Filaree, Long-beaked Filaree		

* <i>Geranium dissectum</i> L.	Grasslands	Common
Common Geranium		

* <i>Geranium molle</i> L.	Grasslands	Common
Dove's Foot Geranium		

MONTIACEAE Miner's lettuce Family

<i>Calandrinia ciliata</i> Ruiz & Pav. DC.	Grasslands	Common
Red Maids		

<i>Claytonia perfoliata</i> Willd. ssp. <i>perfoliata</i>	Woodlands, Riparian	Common
Miners Lettuce		

OROBANCHACEAE Broomrape Family

<i>Cordylanthus pilosus</i> A. Gray subsp. <i>pilosus</i>	Oak Woodland	Occasional
NCN		

PHRYMACEAE Lopseed Family

<i>Mimulus guttatus</i> DC.	Riparian	Common
Common Monkey Flower		

PLANTAGINACEAE Plantain Family

<i>Plantago erecta</i> E. Morris	Grassland, Open Woodland	Common
California Plantain		

POLEMONIACEAE Phlox Family

<i>Gilia tricolor</i> Benth.	Grasslands	Occasional
Birds Eyes		

<i>Leptosiphon bicolor</i> Nutt.	Grassland, Chaparral- Open Areas	Occasional
NCN (= <i>Linanthus</i>)		

POLYGONACEAE Buckwheat Family

<i>Persicaria lapathifolia</i> (L.) Gray	Moist Areas	Common
Willow Weed (= <i>Polygonum</i>)		

* <i>Rumex acetosella</i> L.	Ruderal	Common
Sheep Sorrel		

* <i>Rumex crispus</i> L.	Ruderal	Common
Curly Dock		

RANUNCULACEAE Buttercup Family

<i>Ranunculus californicus</i> Benth.	Grasslands, Woodlands	Common
Buttercup		

* <i>Ranunculus muricatus</i> L.	Grasslands, Ruderal	Occasional
Pickle-fruited Buttercup		

MAJOR PLANT GROUP		
Family	Genus	Habitat Type
	Common Name	Abundance

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RUBIACEAE Madder Family		
	<i>Galium aparine</i> L.	Woodlands, Riparian, Ruderal
	Goose Grass	
	<i>Galium porrigens</i> Dempster	Grasslands, Woodlands
	Climbing Bedstraw	
VERBENACEAE Vervain Family		
	<i>Verbena lasiostachys</i> Link.var. <i>lasiostachys</i>	Riparian, Ruderal
	Verbena	Occasional

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS

CLASS--MONOCOTYLEDONAE-GRASSES

POACEAE Grass Family		
	* <i>Aira caryophyllea</i> L.	Grassland
	Silver European Hairgrass	
	* <i>Avena barbata</i> Link.	Grasslands
	Slender Wild Oat	
	* <i>Briza minor</i> L.	Grasslands, Ruderal
	Small Quaking Grass	
	<i>Bromus carinatus</i> Hook& Arn.var. <i>carinatus</i>	Grasslands, Woodlands, Ruderal
	California Brome	Common
	* <i>Bromus diandrus</i> Roth	Ruderal, Grasslands
	Ripgut Grass	
	* <i>Bromus hordeaceus</i> L.	Grasslands
	Soft Chess, Blando Brome	
	* <i>Bromus madritensis</i> L. ssp. <i>rubens</i>	Grasslands, Ruderal
	Foxtail Chess	
	* <i>Cynosurus echinatus</i> L.	Ruderal
	Hedgehog, Dogtail	
	* <i>Elymus caput-medusae</i> L.	Grasslands
	Medusahead (= <i>Taeniantherum caput-medusae</i>)	
	* <i>Festuca bromoides</i> L.	Ruderal, Moist Flats become Dry
	Six-weeks Fescue (= <i>Vulpia bromoides</i>)	
	<i>Festuca microstachys</i> Nutt.	Grasslands, Ruderal
	NCN (= <i>Vulpia microstachys</i>)	
	* <i>Festuca perennis</i> (L.) Columus& Sm.	Grasslands
	Perennial Rye Grass (= <i>Lolium multiflorum</i> , <i>L. perenae</i>)	
	<i>Hordeum depressum</i> (Scribn.&Sm.) Rydb	Grasslands
	Low Barley	Occasional
	* <i>Poa annua</i> L.	Grasslands
	Annual Bluegrass	Common

MAJOR PLANT GROUP		
Family	Genus	Habitat Type
	Common Name	Abundance

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* <i>Polypogon monspeliensis</i> (L.) Desf.	Wetlands	Common
Rabbitfoot Grass, Annual Beard Grass		

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS

CLASS--MONOCOTYLEDONAE--SEDGES AND RUSHES

JUNCACEAE

<i>Juncus bufonius</i> L.var. <i>bufonius</i>	Ruderal Moist Areas, Grasslands	Common
Toad Rush		

VASCULAR PLANTS DIVISION ANTHOPHYTA --ANGIOSPERMS

CLASS--MONOCOTYLEDONAE--HERBS

AGAVACEAE Centuray Plant Family

<i>Chlorogalum pomeridianum</i> (DC.) Kunth var. <i>pomeridianum</i>	Woodlands, Grasslands	
Soap Plant		Common

LILIACEAE Lily Family

<i>Calochortus superbis</i> Howell	Grasslands	Occasional
Supurb Mariposa Tulip		

THEMIDACEAE Brodiaea Family

<i>Dichelostemma capitatum</i> (Benth.) Wood	Grasslands, Open Woodlands	Occasional
Blue Dicks		

<i>Dichelostemma congestum</i> (Sm) Kunth	Grasslands	Occasional
Forked Tooth Ookow		

<i>Triteleia laxa</i> Greene	Grasslands	Occasional
Ithurriel's Spear		

Fauna Species Observed in the Vicinity of the Project Site

The nomenclature for the animals found on the project site and in the immediate vicinity follows: Mc Ginnis –1984, for the fresh water fishes; Stebbins -1985, for the reptiles and amphibians; and Udvardy and Farrand – 1998, for the birds; and Jameson and Peeters -1988 for the mammals.

AMPHIBIA AND REPTILIA

ORDER

Common Name	Genus	Observed
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ANURA

Tree Frog	<i>Hyla regilla</i>	X
Bullfrog	<i>Rana catesbeiana</i>	X
Western Toad	<i>Bufo boreas</i>	X

AMPHIBIA AND REPTILIA

ORDER

Common Name	Genus	Observed
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SQUAMATA

Western Fence Lizard	<i>Sceloporus occidentalis</i>	X
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AVES

ORDER

Common Name	Genus	Observed
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AVES

Acorn Woodpecker	<i>Melanerpes formicivorus</i>	X
Black Phoebe	<i>Sayornis nigricans</i>	X
California Quail	<i>Callipepla californica</i>	X
Killdeer	<i>Charadrius vociferus</i>	X
Red-shouldered Hawk	<i>Buteo lineatus</i>	X
Rufous-sided Towhee	<i>Pipilo erythrophthalmus</i>	X
Wild Turkey	<i>Meleagris gallopavo</i>	X

MAMMALS

ORDER

Common Name	Genus	Observed
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CARNIVORA

Coyote	<i>Canis latrans</i>	Scat
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CERVIDAE

Black-tailed Deer

Odocoileus hemionus

Sight

RODENTIA

Dusky-footed Wood Rat

Neotoma fuscipes

Den

APPENDIX B

Definitions (Not all are relevant to this project)

Absolute Cover. The percentage of ground covered by the vertical projection of the plant crowns of a species or defined set of plants as viewed from above. The absolute cover of herbaceous plants includes any standing (attached to a living plant, and not lying on the ground) plant parts, whether alive or dead; this definition excludes litter and other separated plant material. The cover may include mosses, lichens and recognizable cryptogamic crusts.

Best Management Practices. Best management practices represent the construction or agricultural practices that are consistent with regulatory laws or industry standards which are prudent and consistent with site conditions.

Confidence Interval. The California Department of Fish and Game (DFG) California Natural Diversity Data Base (CNDDDB) uses map polygon projections for indicating potential for occurrence of special-status plant populations around a recorded occurrence.

Critical Habitat. Critical habitat is by definition a designated by U.S. Fish and Wildlife Service as essential for the existence of a particular population of species. The U.S. Fish and Wildlife Service designates critical habitat for special-status species as an area or region within which a species may be found. "Critical habitat" is defined as areas essential for the "conservation" of the species in question.

Habitat Fragmentation. The issue of habitat fragmentation is of concern locally, nationally, and globally. The term habitat fragmentation refers to the loss of connections within the biosphere such that the movement, genetic exchange, and dispersal of native populations is restricted or prevented. Anthropogenic habitat fragmentation can be the result of a road construction, logging, agriculture, or urban growth. The practice of retaining or planning for "Corridors" is an attempt to address this issue. Corridors that allow movement of wildlife through and around a site include stream and riparian areas and also areas that connect two or more sites of critical wildlife habitat.

Habitat Types. Habitat types are used by DFG to categorize elements of nature associated with the physical and biological conditions in an area. These are of particular importance for the wildlife they support, and they are important as indicators of the potential for special-status species.

Relative Cover. A measure of the cover of a species in relation to that of other species within a set area or sample of vegetation. This is usually calculated for species that occur in the same layer (stratum) of vegetation, and this measure can be calculated across a group of samples.

Riparian Corridor. Riparian corridors can be defined as the stream channel between the low-water and high-water marks plus the terrestrial landscape above the high water-mark (where

vegetation may be influenced by elevated water tables or extreme flooding and by the ability of the soils to hold water; Naiman, et. al. 1993).

Riparian Corridor or Riparian Ecosystem. Riparian ecosystems occupy the ecotone between upland and lotic aquatic realms. Riparian corridors can be defined as the stream channel between the low- and high-water marks plus the terrestrial landscape above the high water-mark (where vegetation may be influenced by elevated water tables or extreme flooding and by the ability of the soils to hold water; Naiman, et. al. 1993).

Ruderal Habitat. Ruderal habitat is characterized by disturbance and the establishment and dominance of non-native introduced weed species. Ruderal plant communities are a function of or result of agricultural or logging practices. This habitat is typically found along graded roads, erosional surfaces or sites influenced by agricultural animal populations.

Sensitive Habitat. DFG Natural Diversity Data Base uses environmentally sensitive plant communities for plant populations that are rare or threatened in nature. Sensitive habitat is defined as any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes. Sensitive Habitat also includes wetlands and tributaries to "Waters of the US" as defined by the Corps of Engineers (ACOE) and DFG seasonal streams DFG.

Serpentinite. Serpentinite or serpentine consists of ultramafic rock outcrops that due to the unique mineral composition support a unique flora often of endemics. Kruckeberg, 1984, indicates that the taxonomy and evolutionary responses to serpentines include "1) taxa endemic to serpentine, 2) local or regional indicator taxa, largely confined to serpentine in parts of their ranges, 3) indifferent or "bodenvag" taxa that range on and off serpentine, and 4) taxa that are excluded from serpentine." Serpentine outcrops or serpentinites support numerous special-status plant taxa.

Special-status Species. Special-status organisms are plants or animals that have been designated by Federal or State agencies as rare, endangered, or threatened. We have also included plant species listed by the CNPS as "target organisms." The target species for the Quadrangle are discussed below. Section 15380 of the California Environmental Quality Act [CEQA (September, 1983)] has a discussion regarding non-listed (State) taxa. This section states that a plant (or animal) must be treated as Rare or Endangered even if it is not officially listed as such. If a person (or organization) provides information showing that a taxa meets the State's definitions and criteria, then the taxa should be treated as such.

Standard Agricultural Practices. Standard agricultural practices are best management practices which are prudent as applied in the agricultural industry such as the use of regulated pesticides, methods of and timing of weed control, appropriate fertilizer application, irrigation

management, frost protection, erosion control and soil conservation and management, and dust control among other practices.

Streams. The DFG definition of stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports wildlife, fish, or other aquatic life. This includes watercourses having a surface or subsurface flow that support or have supported riparian vegetation. DFG's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

Target organisms. Special-status species that are listed by: the California Department of Fish and recorded in the Natural Diversity Data Base for the Quadrangle and surrounding Quadrangles of the project site; the California Native Plant Society for the habitat present on the project site Quadrangle and surrounding Quadrangles; Federal Endangered and Threatened Species that Occur in the U.S.G.S. 7 1/2 Minute Quadrangle; our experience with the local flora and fauna; any species identified by local individuals that are considered to be rare in the region; and DFG Five Mile radius CNDDDB Rarefind 3 search (See Plate II).

Wetlands. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Vernal Pools. Vernal pools are a type of seasonal wetland distinct for California and the western US. Typically they are associated with seasonal rainfall or "Mediterranean climate" and have a distinct flora and fauna, an impermeable or slowly permeable substrate and contain standing water for a portion of the year. They are characterized by a variable aquatic and dry regime with standing water during the spring plant growth regime. They have a high degree of endemism of flora and fauna.

Federal Regulations

Federal Endangered Species Act Pursuant to the federal Endangered Species Act (ESA), the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA), have authority over projects that may affect the continued existence of a species that is federally listed as threatened or endangered. Section 9 of ESA prohibits the take of a federally listed species; take is defined, in part, as killing, harming, or harassment and includes habitat modification or degradation where it actually results in death or injury to wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering.

Section 404 of the Clean Water Act Section 404 of the Clean Water Act establishes a requirement to obtain a permit before any activity that involves any discharge of dredged or fill material into "waters of the United States," including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

Army Corps of Engineers (ACOE) regulates and issues 404 permits for activities that involve the discharge of dredged or fill materials into waters of the United States. A Water Quality Certification 401 permit must also be obtained from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Board to the nine Regional Water Quality Control Boards (RWQCBs).

State Regulations

California Endangered Species Act Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, a permit from Department of Fish and Game (DFG) is required for projects that could result in the take of a state listed threatened or endangered species. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the ESA does. As a result, the threshold for a take under CESA is higher than that under the ESA.

California Fish and Game Code Section 1600 – Lake and Streambed Alteration Permit. All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by DFG pursuant to Section 1600 of the California Fish and Game Code. Section 1600 states that it is unlawful for any person, government agency, state, local, or any public utility to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or deposit or dispose of waste, debris, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake without first notifying DFG of such activity.

Porter-Cologne Water Quality Control Act Under the Porter-Cologne Water Quality Control Act, "waters of the state" fall under the jurisdiction of the RWQCB. Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control non-point and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the Clean Water Act.

Napa County Ordinances, Conservation Regulations, and other Programs 1.1 Napa County Conservation Regulations (Chapter 18.108)

Napa County Code 18.108 includes conservation regulations such as requirements for standard erosion control measures, provisions for intermittent or perennial streams, and requirements for use of erosion hazard areas. This section of the code also defines streams and provides setbacks for grading and land clearing for agricultural development.

The general purpose of the Conservation Regulations is to ensure the continued long-term viability of county agricultural resources by protecting county lands from excessive soil loss (i.e., surface erosion, soil particle detachment and movement) which if unprotected could threaten local

water quality and quantity and lead ultimately to loss of economic productivity (18.108.010) and possible decreased water quality in receiving waters.

Napa County Code

The following pertains to stream setbacks and tree and riparian vegetation protection provisions excerpted from Napa County Zoning Code, namely the Conservation Regulations, Chapter 18.108.

Section 18.108.100 – Erosion Hazard Areas; Vegetation Preservation and Management

Napa County Code 18.108.100 may require the following conditions when granting a discretionary permit for activities on slopes greater than 5 percent:

- Existing vegetation shall be preserved to the maximum extent feasible. Vegetation shall not be removed if necessary for erosion control or preservation of habitat for threatened or endangered species.
- An approved erosion control plan (ECPA) permit or grading permit is required for the grading associated with the removal of trees or tree stands measuring six inches in diameter (dbh) or larger. Replacement of removed protected trees located outside of the approved project boundary may be required. Trees to be avoided by project activities shall be protected through fencing or other methods during construction.

Section 18.108.025 – General Provisions, Intermittent/Perennial Streams

This section of the County code establishes stream setbacks for earthmoving activities and grading for all new developments, including agricultural and residential developments, and for replanting of existing vineyards when replanting occurs outside of the existing vineyard footprint and when the project would require a grading permit pursuant to the California Building Code. Under Section 18.108.030 a stream means any of the following:

- A watercourse designated by a solid line or dash and three dots symbol on the largest scale of the United States Geological Survey maps most recently published, or any replacement to that symbol.
- Any watercourse which has a well-defined channel with a depth greater than 4 feet and banks steeper than 3:1 (horizontal to vertical bank ratio) and contains hydrophilic (i.e. water adapted) vegetation, riparian vegetation or woody vegetation including tree species.
- Those watercourses listed in Resolution No. 94-16 and incorporated herein by reference.

Setbacks included in the Code range from 35 to 150 feet and are dependent on the slope of the terrain parallel to the top of bank of the stream, with wider setbacks required on steeper slopes. Where the outboard dripline of upper canopy vegetation is located outside the setback required by the slope steepness, the setback will extend to the outboard dripline. Re-vegetation of portions of the streamside setbacks may be required as a part of an erosion control plan.

Section 18.108.027 – Sensitive Domestic Water Supply Drainages

This section of the County code requires the maintenance/preservation of 60% tree canopy cover and 40% of shrubby and herbaceous cover present as of 1993 as part of land uses involving ground disturbance in sensitive domestic water supply drainages.

Ground-disturbing activities in the County's Domestic Water Supply Drainages are only allowed to take place during the dry season, between April 1 and September 1 of each year. Installation of winterization measures may take place during other times of the year, but must be in place by September 15 of any given year.

Napa County's Domestic Water Supply Drainages include the entire watershed areas associated with the following reservoirs:

Kimball Reservoir Drainage, Rector Reservoir Drainage, Milliken Reservoir Drainage, Bell Canyon Reservoir Drainage, Lake Hennessey Drainage including Friesen Lakes, Lake Curry Drainage, and Lake Madigan Drainage

In these Sensitive Domestic Water Supply Drainages concentration of runoff will, wherever feasible, be avoided. Those drainage facilities and outfalls that unavoidably must be installed are required to be sized and designed to handle the runoff from a one-hundred-year storm event without failure or unintentional bypassing. If a project will increase delivery of sediment or other pollutants from a drainage into a public water supply (reservoir) by more than 1% on an individual project basis or by more than 10% on a cumulative basis, the project will not be approved until a public hearing on the matter has been held and a use permit has been issued. A geotechnical report specifying the depth and nature of the soils and bedrock present and the stability of the area potentially affected by the project or project runoff is required for any project located in a Sensitive Domestic Water Supply Drainage.

Section 18.108.070 – Erosion Hazard Areas–Use Requirements

This section of the code stipulates that uses permitted within erosion hazard areas, those portions of land having slopes over five percent (5%), must include temporary and/or permanent erosion control measures in conformance with the County's National Pollution Discharge Elimination System (NPDES) General Permit on file with the state (i.e., a suite of Best Management Practices to eliminate, control and or minimize sediment/soil particle detachment and transport). The section further requires erosion control plan approval for agricultural earthmoving activity on lands having slopes greater than 5%, and establishes grading deadlines (i.e., a winter shutdown period).

Additionally, this section, together with Chapter 18.108.100, limits the removal of vegetation in erosion hazard areas to only that necessary to accommodate the proposed project, sets conditions for the preservation and/or replacement of trees in excess of six inches in diameter, and requires projects to have no adverse affect on sensitive, rare, threatened or endangered plants or animal or their habitats as designated by state or federal agencies with jurisdiction, and mapped on the County's environmental sensitivity maps.

Section 18.108.075 – Requirements for Structural Erosion Control Measures

This section establishes erosion control requirements for structural developments (anything built or constructed on, above, or below the surface of the land), and requires the submission of Evidence of Erosion Control Measures, and the incorporation of such measures in all applicable building, grading, septic, or other required plans or plot plans submitted for County approval. This section of the County Code is carried out through the NPDES program administered through the Napa County Department of Public Works.

Section 18.108.135 – Oversight and Operation Requirements

Maintenance and monitoring is a requirement of any erosion control plan and is the ultimate responsibility of the property owner. Section 18.108.135 requires that maintenance and monitoring be implemented for any erosion control plan and includes the following components:

- Implementation of the ECP measures must be overseen by the preparer of the ECP.
- The property owner must provide weekly inspections of the control measures between October 1st and April 1st of each year, as well as during rainfall events, to assure the measures are installed properly and are effective in controlling offsite sediment transport, and to implement whatever actions are needed to keep them functioning properly.
- The property owner must implement a permanent, on-going self-monitoring program of the groundcover conditions and erosion control facility operations. The groundcover monitoring shall conform to the NRCS standards for determining rangeland conditions.
- The property owner must submit to the County an Annual Erosion Control Plan Operation Status Report that specifies the groundcover conditions and how the erosion control measures are operating. The report shall specify the proposed management and cultural measures to be used the following year to return or maintain the ground cover in optimal condition and any other remedial actions necessary to restore the disturbed areas in such a manner to minimize erosion and resultant sedimentation.

Specific actions are required under Napa County Code 18.108.135 in the event of existing or pending erosion control measure failures. These actions include:

- Issuance of notification to the County;
- Implementation of temporary measures to stabilize the situation;
- Modification of the temporary measures, if necessary, within 24-hours of receipt of County comment on the adequacy of temporary measures;
- Submit an engineered plan for measures needed to permanently correct the problem within 96 hours of the discovery;
- Submit a plan for clean-up of the damage done with and engineer's estimate of the cost of cleanup;
- Submit, if necessary, a modified plan and cost estimate for the problem within 48 hours of receipt of County comments on the adequacy of the plan;
- Pay the County the cost of review within 48 hours of request;

- Post a security in the amount of 100 percent of the total cost to correct the problem and cleanup the damage;
- Insure the final correction and cleanup plans are implemented within 96 hours of its approval.

Finally, to assure the erosion control measures are adequately in place, the County may perform annual inspections of the project site, after the first major storm event of each winter and until the project has been completed and stable for three years. During these inspections, County staff may require that remedial actions be implemented where non-functioning or ineffective measures are identified. Additionally, once the project has been deemed complete, random site inspections by County staff may also occur with the same consequences.

APPENDIX C

California Native Plant Society Electronic Inventory

**California Department of Fish and Game Rare Find Three
Special-status species for the Quadrangle and Surrounding Quadrangles**

**U.S. Fish and Wildlife Federal Endangered and Threatened Species that
Occur in or may be affected by Projects in the
Quadrangle**



Inventory of Rare and Endangered Plants

v7-12aug 8-10-12

Status: search results - Mon, Sep. 10, 2012 16:15 c

Your Quad Selection: **Lake Berryessa (515C)** 3812252, Mount Vaca (499A) 3812241, Capell Valley (499B) 3812242, Chiles Valley (516D) 3812253, Walter Springs (516A) 3812263, Yountville (500A) 3812243, Monticello Dam (515D) 3812251, Esparto (515A) 3812261, Brooks (515B) 3812262

scientific	common	family	CNPS
<u>Astragalus claranus</u>	Clara Hunt's milk-vetch	Fabaceae	List 1B.1
<u>Astragalus rattanii</u> var. <u>jepsonianus</u>	Jepson's milk-vetch	Fabaceae	List 1B.2
<u>Brodiaea leptandra</u>	narrow-anthered brodiaea	Themidaceae	List 1B.2
<u>Calochortus pulchellus</u>	Mt. Diablo fairy-lantern	Liliaceae	List 1B.2
<u>Calycadenia micrantha</u>	small-flowered calycadenia	Asteraceae	List 1B.2
<u>Ceanothus purpureus</u>	holly-leaved ceanothus	Rhamnaceae	List 1B.2
<u>Cryptantha dissita</u>	serpentine cryptantha	Boraginaceae	List 1B.2
<u>Downingia pusilla</u>	dwarf downingia	Campanulaceae	List 2.2
<u>Erigeron greenei</u>	Greene's narrow-leaved daisy	Asteraceae	List 1B.2
<u>Fritillaria pluriflora</u>	adobe-lily	Liliaceae	List 1B.2
<u>Gilia capitata</u> ssp. <u>tomentosa</u>	woolly-headed gilia	Polemoniaceae	List 1B.1
<u>Hesperolinon bicarpellatum</u>	two-carpellate western flax	Linaceae	List 1B.2

<u>Hesperolinon breweri</u> 📷	Brewer's western flax	Linaceae	List 1B.2
<u>Hesperolinon serpentinum</u> 📷	Napa western flax	Linaceae	List 1B.1
<u>Hesperolinon tehamense</u> 📷	Tehama County western flax	Linaceae	List 1B.3
<u>Juglans hindsii</u> 📷	Northern California black walnut	Juglandaceae	List 1B.1
<u>Lasthenia conjugens</u> 📷	Contra Costa goldfields	Asteraceae	List 1B.1
<u>Layia septentrionalis</u> 📷	Colusa layia	Asteraceae	List 1B.2
<u>Leptosiphon jepsonii</u> 📷	Jepson's leptosiphon	Polemoniaceae	List 1B.2
<u>Limnanthes vinculans</u> 📷	Sebastopol meadowfoam	Limnanthaceae	List 1B.1
<u>Navarretia leucocephala</u> ssp. <u>pauciflora</u> 📷	few-flowered navarretia	Polemoniaceae	List 1B.1
<u>Navarretia rosulata</u> 📷	Marin County navarretia	Polemoniaceae	List 1B.2
<u>Penstemon newberryi</u> var. <u>sonomensis</u> 📷	Sonoma beardtongue	Plantaginaceae	List 1B.3
<u>Sidalcea keckii</u> 📷	Keck's checkerbloom	Malvaceae	List 1B.1
<u>Streptanthus hesperidis</u>	green jewel-flower	Brassicaceae	List 1B.2
<u>Trichostema ruygtii</u> 📷	Napa bluecurls	Lamiaceae	List 1B.2

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Lake Berryessa and Surrounding Quadrangles

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Agelaius tricolor tricolored blackbird	ABPBXB0020			G2G3	S2	SC
2 Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
3 Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030			G2	S2	
4 Andrena macswaini An andrenid bee	IIHYM35040			G1G3	S1S3	
5 Antrozous pallidus pallid bat	AMACC10010			G5	S3	SC
6 Aquila chrysaetos golden eagle	ABNKC22010			G5	S3	
7 Ardea alba great egret	ABNGA04040			G5	S4	
8 Ardea herodias great blue heron	ABNGA04010			G5	S4	
9 Astragalus rattanii var. jepsonianus Jepson's milk-vetch	PDFAB0F7E1			G4T3	S3	1B.2
10 Athene cucularia burrowing owl	ABNSB10010			G4	S2	SC
11 Brodiaea leptandra narrow-anthered brodiaea	PMLILO0C22			G2G3	S2S3.2	1B.2
12 Buteo swainsoni Swainson's hawk	ABNKC19070		Threatened	G5	S2	
13 Calycadenia micrantha small-flowered calycadenia	PDAST1P0C0			G2G3	S2S3.2	1B.2
14 Calyptridium pulchellum Mariposa pussypaws	PDPOR09060	Threatened		G1	S1	1B.1
15 Ceanothus purpureus holly-leaved ceanothus	PDRHA04160			G2	S2	1B.2
16 Cryptantha dissita serpentine cryptantha	PDBOR0A0H2			G2	S2	1B.2
17 Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened		G3T2	S2	
18 Downingia pusilla dwarf downingia	PDCAM060C0			G2	S2	2.2
19 Elanus leucurus white-tailed kite	ABNKC06010			G5	S3	
20 Emys marmorata western pond turtle	ARAAD02030			G3G4	S3	SC
21 Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0			G2	S2	1B.2
22 Falco mexicanus prairie falcon	ABNKD06090			G5	S3	
23 Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	unknown code...	G4T3	S2	

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Lake Berryessa and Surrounding Quadrangles

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 Fritillaria pluriflora adobe-lily	PMLILOV0F0			G3	S3	1B.2
25 Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	
26 Hesperolinon bicarpellatum two-carpellate western flax	PDLIN01020			G2	S2.2	1B.2
27 Hesperolinon breweri Brewer's western flax	PDLIN01030			G2	S2	1B.2
28 Hesperolinon tehamense Tehama County western flax	PDLIN010C0			G2	S2	1B.3
29 Icteria virens yellow-breasted chat	ABPBX24010			G5	S3	SC
30 Juglans hindsii Northern California black walnut	PDJUG02040			G1	S1.1	1B.1
31 Lasiurus blossevillii western red bat	AMACC05060			G5	S3?	SC
32 Lasiurus cinereus hoary bat	AMACC05030			G5	S4?	
33 Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered		G1	S1	1B.1
34 Layia septentrionalis Colusa layia	PDAST5N0F0			G2	S2.2	1B.2
35 Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140			G2	S2	1B.2
36 Leptosiphon serrulatus Madera leptosiphon	PDPLM09130			G1?	S1?	1B.2
37 Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
38 Lupinus citrinus var. citrinus orange lupine	PDFAB2B103			G2T2	S2.2	1B.2
39 Mimulus gracilipes slender-stalked monkeyflower	PDSCR1B1C0			G2G3	S2S3	1B.2
40 Myotis evotis long-eared myotis	AMACC01070			G5	S4?	
41 Myotis yumanensis Yuma myotis	AMACC01020			G5	S4?	
42 Navarretia leucocephala ssp. pauciflora few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	G4T1	S1	1B.1
43 Navarretia rosulata Marin County navarretia	PDPLM0C0Z0			G2?	S2?	1B.2
44 Northern Vernal Pool	CTT44100CA			G2	S2.1	
45 Penstemon newberryi var. sonomensis Sonoma beardtongue	PDSCR1L483			G4T1	S1.3	1B.3
46 Phalacrocorax auritus double-crested cormorant	ABNFD01020			G5	S3	
47 Rana boylei foothill yellow-legged frog	AAABH01050			G3	S2S3	SC

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Scientific Name - Lake Berryessa and Surrounding Quadrangles

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
48 Rana draytonii California red-legged frog	AAABH01022	Threatened		G4T2T3	S2S3	SC
49 Riparia riparia bank swallow	ABPAU08010		Threatened	G5	S2S3	
50 Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered		G1	S1	1B.1
51 Streptanthus hesperidis green jewel-flower	PDBRA2G510			G2	S2	1B.2
52 Trichostema ruygtii Napa bluecurls	PDLAM220H0			G2	S2	1B.2

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

**Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
LAKE BERRYESSA (515C)
U.S.G.S. 7 1/2 Minute Quad**

Database last updated: September 18, 2011

Report Date: September 10, 2012

Listed Species

Invertebrates

Desmocerus californicus dimorphus-valley elderberry longhorn beetle (T)

Syncaris pacifica-California freshwater shrimp (E)

Fish

Hypomesus transpacificus-delta smelt (T)

Oncorhynchus tshawytscha-Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense-California tiger salamander, central population (T)

Rana draytonii-California red-legged frog (T)

Birds

Strix occidentalis caurina-northern spotted owl (T)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species